The Iron A

A Review of the Hardware and Metal Trades.

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Mediæval Wrought Iron Work.

Ornamental work in wrought iron has for many years been greatly neglected by both artists, artisans and the decorators. Where iron is to be used in ornamental work it is almost always cast, so that people seem to have forgotten entirely the capabilities of wrought iron for decorative purposes. In the middle ages the value of wrought iron ornaments was highly appreciated; great ability was displayed in its management, and the results attained were of ten of extraordinary beauty. Our cut repre sents a wrought iron grating intended for a window lattice. It is from a house in Ratisbon Bavaria. While it is by no means an example of the best mediæval work, still it is a very interesting example of a style of workmanship which deserves to be revived. In the treatment of the spirals, or volutes, the workman fell into error of making them regular spirals in stead of geometric, as it might be termed. This robs the design somewhat of its beauty. By the use of both round and square iron, variety is obtained in the tracery. The leaves and rosettes are of plate lined by the hammer, but not raised or embossed. The spirals, which are so effective, are easily produced and are beautifully proportioned. In looking over the whole grating, it will be seen that the means used to produce a given effect are always simple, and in most cases easy. The molded bands, for example, which are so effective, seem to be made with a broad flat band clasped outside with a half-round strap, the whole giving the effect of a molding, which, in the solid, would be some what difficult to obtain except at the expense

of a good deal of swedging.

Blacksmithing as a fine art seems to have almost entirely disappeared, and now the reproduction of any of the old work is a matter of no little difficulty. The growing taste for work of this kind is an encouraging sign, and we may expect before long to find it as common, and perhaps as good, as it was some centuries since. A great deal of the scroll and decorative iron work which we are now in the habit of seeing cast was then worked up in sheet metal. Some of the ancient work seems to be a combination of cast and wrought iron, the metal having been malleableized and then finished by forging. Great use was made of leafage struck up, while hot, from sheets or plates, and then the ends curled, or twisted. so as to develop the leaf.

For brackets, railings, gates, and for many other uses outdoors, where strength and beauty are both desirable, wrought iron is the only metal which seems in any way to meet all the requirements of the case. It twists, bends, spreads out beneath the hammer, is quickly and easily worked, and, above all, is strong and unyielding when cold. Such a material will not be long out of fashion, and we are glad to notice that in some of the best buildings put up in the city within the last year or two, the architects have begun to appreciate the value of the material, and have used it both well and liberally in the exterior decorations.

The Dexter Carriage Spring.

time, the platform spring has superseded the

springs are rigidly attached to each other at at the Centennial, sustaining a load of over 1100 marine work in the Eastern States are George their centers, and are pivoted at their ends to pounds. spring links above or on either side of axle and spring bar. The spring links are rigidly at tached to the head block and rear axle respect-Ively.

the other prevents side motion and the settling | A diver descends-he does not dive head-fore- of

Submarine Operations.

Among the most interesting, because sur-The parallel motion of the springs prevents mounted with such a semi-mystery, are the engaged at present: They are laying the rocking of the axles. One spring being above operations connected with works under water.

W. Townsend & Co., 214 Atlantic avenue, Boston, all the members of the concern being practical divers of long experience. The Boston Journal of Commerce gives the following account of the operations upon which they are heavy sea-wall on South Boston Flats in 33 feet water at high tide, and 23 feet at low

and a powerful derrick capable of raising ten tons, air engines for supplying the divers, and a drilling apparatus consisting of a steam drill erected on a tripod 35 feet high, with extension egs to allow for inequalities of the bottom; a shaft is run from the drill to the bottom of the tripod, to which is attached the drill point, The steam for working the drill is furnished from the sloop through a flexible rubber pipe. The diver descends, locates the holes, replaces drill points, etc. About a dozen holes are drilled about 3 feet apart, and from 3 to 5 feet deep. When in readiness for blasting the drill and tripod are taken up by the sloop and removed to a convenient distance. Different kinds of explosives are used, according to the nature of the blast, as nitro-glycerine, rendrock, vulcan powder, Dualin and common powder. The explosive is put into tin cart-ridges just fitting the holes made by the drill, 3 inches in diameter, and varying in length from 2 to 4 feet; an electric exploder is then inserted in each one, and gutta percha insulating wire connected with each cartridge. The holes are cleared thoroughly from all sediment and chips caused by working the drill by forcing a powerful stream of water to the bottom of each; the cartridges are inserted, the wires connected, the vessel hauled off a sufficient distance, and the charge is exploded. The debris is then taken up, the large pieces hoisted on board by chains, the smaller ones by tubs, and all removed ashore.

They are also operating on the wreck of the steamer Oriental. They have removed all the cargo on a percentage for the underwriters. engaged in saving that and the machinery ber of the concern, with the sloop Stella, and a competent force of men, are engaged on this job, and as it is in a very exposed situation great care and experience are necessarily required to work with profit and safety. In Bangor operations are being carried on under the personal supervision of Captain E. A. Bailey, another member of the concern, and consist in the removal of the Green Pier Ledge. At Lanesville, near Rockport, they are engaged in rebuilding the breakwater, which was overthrown by the force of the waves. They have also recently surveyed the channel at Hingham for the Steamboat Company and removed a number of rocks and obstructions. Among other operations in this harbor have been the removal of Kelley's Ledge, Corwin Rock and Tower Rock in the main channel, and Barrel Rock in Broad Sound. This last obstruction was a singular one. It resembled an immense egg on its small end, the water all around was quite deep, and while all the ledges in the harbor are composed of slate, this boulder was pure granite; surely it never grew there, and the only reasonable theory is that it must have been deposited there in some remote period

and have blown the hull to pieces, and are now piecemeal. Captain Eugene Sullivan, a mem-

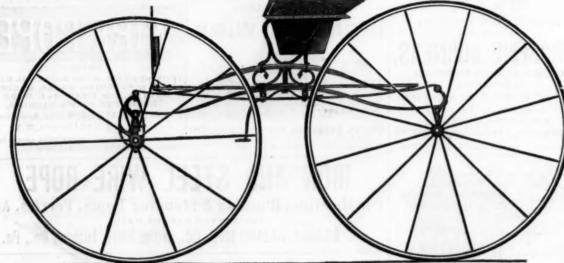
from some iceberg or glacier. Steel Hawsers-The introduction of large ships of war has rendered the old-fash-



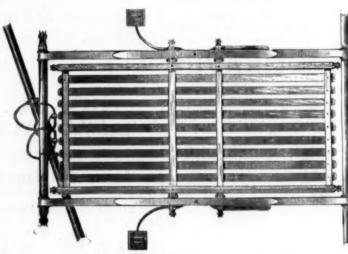
MEDIÆVAL WINDOW GRATING AT RATISBON, BAVARIA.

of the body to one side. The absence of a most as some may suppose, but simply sinks | tide. The bottom has to be perfectly levelled reach allows either wheel to pass over an obstruction almost independently of the other haps for hours; the pumps are kept moving, guide planks spiked on to spiles driven in posiwheels, especially when driving rapidly. The an attendant stands on the deck of the vessel elasticity of the springs takes much strain off the fifth wheel, and cushions the stroke when the fifth wheel the fift striking an obstruction. No extra braces are constantly arising to the surface, designating stretchers, breaking joints everywhere. This cables and hawsers than are used for 6000 In the best carriage building practice of the needed to hold the wheels in track, since every the position of the diver, are all the spectator stone is laid at the rate of sometimes 100 tons ton vessels. For this reason some strain tending to throw the wheels out of track | can see, while the operations below are known | per day. The air for the divers is supplied by a experiments have been made with steel

tion, placed at the requisite depth, and levelled



THE DEXTER CARRIAGE SPRING.



various forms. It is now conceded that the direction possible. side spring has the most pleasant and undulating motion, as, being in the line of the motion jerks communicated by the elliptic.

Among the latest forms of the side springs is the Dexter, which we illustrate on this page. satisfaction. Not a single spring of the Dexter mortal enemy under ordinary circumstances, and the location a difficult one to work in on This spring consists essentially of two "Conabove the other and parallel to it. The two pounds, and is now shown in the Main Building Among the principal contractors for sub-

preference is given to the side spring in its direction diagonal to its length—the strongest bis experience is very singular. In this latitude the diver seldom sees any fish of consefinished—in all 1000 feet—this season. On the used was 8 inches in circumference against a

begun a year since by the Dexter Spring Company, of Hutton, a suburb of Pittsburgh, Pa.,
since which time they have sold over 700 sets,
some 500 of which are in use, giving great
satisfaction. Not a single spring of the Dexter
make has been reported broken or settled.
One two-passenger spring has carried 2050
pounds, and is now shown in the Main Building

stores, but in more southern latitudes a man has need of all the courage he is master of at time tso pursue his avocation without fear of the improvements in Boston Harbor. The ledge the improvements in Boston Harbor. The ledge the improvements in Boston Harbor. The ledge to fatack; and yet the fish which is man's most as atisfaction. Not a single spring of the Dexter
make has been reported broken or settled.
One two-passenger spring has carried 2050
pounds, and is now shown in the Main Building

Among the principal contractors for subof the vehicle, it relieves the rider of the quick pany, of Hutton, a suburb of Pittsburgh, Pa., has need of all the courage he is master of at Thom of the U. S. Engineer Corps, in charge of or side springs upon each side, one spring One two-passenger spring has carried 2050 fore a diver in a submarine armor.

tude the diver seldom sees any fish of conse-

The manufacture of the Dexter spring was quence beyond those familiar to us in the fish Upper Middle in the harbor chapnel operations hemp one 25 inches in circumference.

elliptic in heavy vehicles, while for light service | comes upon the slatted frame, or body, in a | only to the one making them, and sometimes | patent steam pump of new design and original | hawsers at Devonport under the anthority

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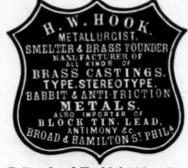
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pid. The demand increases, but with largely increase able to meet the wants of the trade. As the can made up, they next together, thus saving space is the full size of the top of the can, admitting of 1 orying; and so making them produced to the can. s the Yuli size of the top of the can, admitting of perfect cleans-ryng; and so making them much more durnble.

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Early Methods of Transportation.

The colonists, at the time they declared themelves to be an independent nation, occupied a narrow belt of country stretching nearly two thousand miles along the coast, from New Brunswick, a province of Great Britain, to Florida, then subject to the crown of Spain. A small portion of this population only was distant more than a day's journey from navigable tide waters.

As the waters of the Atlantic approached in Virginia more nearly than in any other State the navigable waters of the Mississippi, and as the settlements in it at the outbreak of the Revolution had penetrated further inland than in any other, it was natural that the routes of the Potomac or the James River should first attract attention; and it is a striking coincidence that the man who was pre-eminently the Father of his Country, considered as a nation, should also be the father of the system of artificial highways which in one form or another has spread itself as a vast network over the whole Continent, and has become a distinguishing feature of our civilization. From his early employment as surveyor of lands, Washington became more familiar than any other of his time with the region lying at the headwaters of the Potomac. In all his explorations the subject of a navigable water line from the Chesapeake to the Ohio constantly occupied his thoughts.

At the close of the war Washington again resumed the subject that engrossed so much of his attention, and was instrumental in procuring a charter for his proposed work the States of Virginia and Maryland. He became president of the company that was formed, and secured to it valuable grants both in lands and money. He again crossed the Machinery Hall. mountains for the purpose of making a more careful examination of the country and the practicability of his enterprise. On his return he presented to the Governor of Virginia the Hall. results of his observations, in one of the most able and sagacious papers that ever came from his per.

As Washington soon after was elected President of the United States, the enterprises which he urged with so much intelligence and persistency were abandoned, to be resumed at a distant day, but under conditions which rendered their accomplishment and the results predicted of them wholly unattainable. It is to be re membered, although at the period of which we are speaking canals were regarded as affording the best and cheapest means of inland communication, yet, for the first fifty years after the Declaration of Independence 1.0 great work of the kind was attempted, either for the want of adequate means, or of some crowning necessity, or of some scheme calculated to enlist a sufficiently powerful influence in its favor, the only routes in use were with very few exceptions the old crdinary highways. Upon the primitive soils of New England these erved pretty well as means of transportation; but in all other parts of the country they were wholly inadequate for such purpose. The cost, according to the report of a committee pointed by the Legislature of the State of New York to consider the subject of the Erie Canal, of transporting a ton of wheat from Buffalo to New York, was \$100, and the time required 20 days. Such cost, which is now more than double the value of a ton of wheat in the city of New York, shows how unproductive must have been the labor of the greater portion of our population. Although the Western States at this time had received a large number of immigrants, their industry sufficed for hardly any other purpose than to supply their own necessities in food and clothing.

On April 15th, 1817, an act was passed by the provision for the construction of the Erie Canal. On the 26th of October, 1825, the first boat reached tidewater from Lake Erie. On the 4th of November of that year, the completion of the work was celebrated with every demonstration that could give emphasis to the occasion.

Although the Erie Canal was formally opened in 1825, no considerable amount of tonnage was transported over it till 1826, so that the great revolution in the commerce of the country tional life. Up to that year the best methods of emigrant going West moved with his family Old World 2000 years ago.

constructed by private corporations, so that within fifteen years from the opening of the Erie, 8500 miles of canal were constructed in various parts of the Union, chiefly in the States of New York, New Jersey, Penusylvania, Maryland and Virginia. Of those constructed by the States, only the Erie, and perhaps the Champlain, have proved remunerative upon their ost.-Foor's Railroad Manual,

The Officers of Machinery Hall, Centenntal Exhibition.

The following list will be found convenient for reference by exhibitors in Machinery Hall: John S. Albert-Chief of Bureau of Machinery

Nahum Stetson-Secretary.

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John D. Curtis-Engineer of the same. L. D. Norton-Superintendent in charge of all boilers and steam pipes.

J. C. Kilgore-Engineer of the same. W. E. Plummer-Superintendent of Shoe and Leather Building.

Coking Colorado Coals.-The Colorado Farmer says: Some few weeks ago we had occasion to write a few words about the probable success of the manufacture of coke in Colorado, saying the successful consummation of such an industry would be the opening of a new and brighter era in the history of Colorado than had yet dawned upon her. To-day we can announce to the people of our Territory the most flattering result from the use of the coke manufactured by Mr. N. P. Gutileus of the El Moro Coal and Coke Company. Ensinger & Davis, of the West Denver Iron and Brass Foundry and Boiler Works, have used two blasts of this coke in their works, and pronounce it fully equal in every respect to the best Pennsylania coke. They have used an equal amount of coke to the one hundred pounds of metal and the results are entirely satisfactory. These experiments settle this matter at once and forever. Colorado has now attained that which if properly utilized will place her in the front ranks of manufacturing States. We have raw cres of every kind, and we have the fuel that is required to smelt them to make them valuable to commerce. We need no longer be dependent upon the East for the finishing touches that make our ores valuable. Our lead, copper, iron, silver and gold ores can now be refined here, so as the need of a cheap fuel for the reduction and manufature is nece-sary, and we need have no fear for the future of Colorado, if our business men and capitalists, will only give their attention to the application Legislature of the State of New York making of our resources. Two such works as could be mentioned by the score in Pittsburgh would do more for the material prosperity of Denver than anything that has been done for her for years. The agricultural and pastoral industries will also be greatly benefited by this discovery, and the Farmer is only too happy too have the opportunity of announcing such cheering and desirable information to our readers.

A Historic Hammer-There is a bammer properly dates from the year which marks the beginning of the second half century of our na- Georgetown, District of Columbia, "and theretransportation on land were those in use at the 1800, according to the Cleveland Herald, a very dawn of civilization. Fifty years ago the young man named Webster left Woshington for Spain to superintend a mint, After having and herds precisely as did his ancestors in the lived in Spain for some years, he started home with his savings, which amounted to about 1,600 The opening of the canal almost instantly Spanish doubloons (a doubloon being equal to gave an impulse, wholly unprecedented, to the about \$7.20 in gold). On his way to his native construction of similar works. The States of land the vessel on which he came was overhaul-Pennsylvania, Maryland, Virginia, Ohio, In- ed by a British man-of-war. He was claimed diana and Illinois at once embarked as an Englishman, his money taken, and he upon elaborate systems designed to give to pressed into service. After a few months be almost every portion of their respective ter-ritories the advantages of canal navigation. home and joined the American army, being de-The State of Ohio constructed two lines termined, if possible, to be revenged for his across its territory from Lake Erie to the loss. The war of 1812 was now in progress. It Ohio River, one extending from Cleveland to so happened that he was under Perry's com-Portsmouth, the other from Toledo to Cincin- mand, and participated in the famous victory of nati. Indiana constructed an immense line ex- Lake Erie. In this engagement he used a cuttending from Toledo to Evansville, on the Ohio lass with which he severed the head of a British Illinois constructed one from Lake- soldier entirely from his body, so that it fell be-Michigan, at Chicago, to the navigable waters of tween the two conflicting vessels. With the the Illinois River. Pennsylvama undertook the same instrument he also killed two other Britconstruction of a canal from the Delaware to the ishers, beside doing other good service with Ohio River at Pittsburgh, but was compelled, for want of water at the summit, to supple- and presented his cutlass to his younger brothment the mountain portion by a railroad of er William Webster, as a memento of the about forty miles in length. Maryland was able victory. His brother, who was an upholsterer to push its great work, the Chesapeake and Ohio by trade, after having kept it for many years, Canal, no farther than the base of the moun- finally had it made into a handsome upholstertains at Cumberland. The favorite work of er's hammer, and at his death bequeathed it to Virginia, the James River and Kanawha Canal, Mr. George Birch, who has sacredly kept it, was carried only to the base of the same range. valuing it very highly on account of its hisFron.

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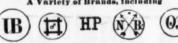
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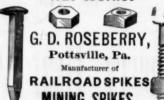
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should have been so completely ignored.

If we go into the average boiler shop we find cools of the crudest description, in many cases mere makeshifts, constructed without regard to any of the rules of design which are considered essential in other classes of machinery. It may be said that boiler makers, as a class, are not progressive, and that an attempt to in roduce improvements among them would meet with no encouragement. Such, however, is not the case, although it is true that while their tools will do the work-no matter how imperfectly, nor at what loss of time-they continue to use them in preference to replacing them with others. The reason of this is not a lack of enterprise, but that the only gain would be the difference between old and new tools, and not that between improved and unimproved. Offer them really improved machines; demonstrate positively that they will effect a saving n time and labor, and there are but few boiler makers who would be so "old fogyish" as not o desire to have them.

Recognizing the importance of this fact, some of our most prominent manufacturers have recently turned their attention to the subject, and as the result we find, among the different exhibits of this class in Machinery Hall, some very creditable improvements over the old styles, which, beside showing the progress already made, promise well for the attainment of a still greater degree of perfection in the near future. Owing to the similarity of many of the punching machines employed in the manufacture of nuts and washers to those used by boiler makers, the former may be included among this class, although not properly belonging to it.

WILLIAM SELLERS & CO.

This firm is well known as among the largest manufacturers of machinery in America. Their display is undoubtedly the most extensive of any in the building. Although the exhibit includes machinists' tools, steam hammers, shafting, &c., beside the class under consideration, it will be necessary, for the purpose of systematizing, to notice at present the latter only, and defer consideration of the former classes until in due course of progress they may be mentioned respectively in proper order. The display of boiler makers' machinery (which is also adapted to the use of iron ship and bridge builders) is very large, including one punching and three shearing machines, one combined punching and shearing machine and a hydraulic riveter of the portable pattern. Undoubtedly the most noticeable of these is a ponderous plate shearing machine for cutting 1 inch plate, any length, 60 inches wide, and also for trimming the edges of long plates. The sliding head, carrying the working shear blade, is of immense size and strength, as is also the housing which supports it. Back of the head, to the full width of the latter, is an unobstructed space, which allows of the unimpeded manipulation of plates not exceeding that width, without regard to length. The motion is derived from a system of mechanism which is a decided novelty in its application to machines of this class, and is capable of supplying without difficulty the enormous power required in per-forming the work for which it is designed. The toggle joint, one of the most powerful of all mechanical contrivances, is used in combination with a worm segment of 72 inches ranation with a worm segment of 72 inches radius and 2½ inches pitch, placed at the inside of the right-hand upright of the housing. Upon a heavy wrought iron shaft, supported by the necessary bearings on top of the housing and traversing the whole width of the upper link or joint of the toggle, is supported the hub of the segment, which by its vibration imparts to the toggle, the upper link of which is a continuation of the former, the required motion. As the latter is connected with the top of the head, a perfectly parallel motion is insured, while from its being of the full width of the head the tremendous crushing strain to which it is subjected is distributed over so which it is subjected is distributed over so which it is subjected is distributed over so the full width of the lead the tremendous crushing strain to which it is subjected is distributed over so the full width of the lead the tremendous crushing strain to which it is subjected is distributed over so the full width of the lead the tremendous crushing strain to which it is subjected is distributed over so that the full width of the lousing and one for power only. The combined punching and shearing machine (eccentric) presents a novelty in the design of the housing and shearing machine (eccentric) presents and one for power only and shearing machine (eccentric) presents the head the tremendous crushing strain to the head the tremendous crushing strain to which it is subjected is distributed over so large a surface as to prevent any danger of breakage. The machine is driven by open and crossed belts 3 inches wide, running upon tight and loose pulleys of 36 inches diameter, upon the shaft of which is a pinion having 12 teeth, which drives a large gear having 96 teeth, keyed to the worm shaft. A reverse motion, similar to that used by the firm on their planing machines, shifts the belts at the proper point. The return stroke is about double the speed of the cut, the difference being made by means of a larger driving pulley on the counter. By means of an automatic stop motion the head is always stopped at the end of the return stroke, to allow of accurate adjustment of the plate. When desired, however, the head may be ron continuously. The stroke is variable up to 21 inches. The weight of the machine, complete, is 38,550 lbs. (over 19 tons.) The combined punching and shearing machine is of good design, and possesses the very desirable quality of simplicity of construction. The throats are 17% inches deep from center of punch, and 20% inches from edge of shear.

having a ball and socket bearing for the end of the lever. The latter, which is of hammered iron, receives motion from a sliding cam ro tated by a large gear driven by a pinion on the shaft carrying tight and loose pulley, the former baving a heavy rim to act as a fly-wheel. The stop motion is effected by means of a hand lever, which slides the cam upon the shaft from under the end of the punch lever. The throat is 26 inches deep from center of punch and the die seat is made small for the purpose of punching flanges, channels, &c. The plate 26 inch shearing machine is similar (with the exception of having a cast iron head) to the machine above mentioned. A shearing machine for angle iron (capacity 6x6 in.) has the head set parallel with the lever, and inclined forward at an angle of 45°. The corresponding edges of the stationary and moving blades are parallel for the purpose of preventing the buckling or bending of the edges of the piece cut off, as is the case where the shears have a gradual cut. In all the lever machines mentioned a quick return motion is effected by the shape of the cam, which allows the lever to drop. The hydraulic riveting machine (Tweddell's patent) appears to be a very efficient contrivance for any work which it can be made to reach, us it is suspended by chains and moved in any direction necessary with the utmost case. The pres sure (water) is maintained by means of a power pump, and is stored in a stationary chamber or reservoir, called an accumulator, which connects—by means of hydraulic tubing having numerous universal joints which allow of unim peded motion-with the cylinder containing the plunger, to which is attached the working rivet In this method of riveting the principle is entirely different from hand or steam riveting, as in the two latter the work is accomplished by impact, while in the former it is by pressure. As the best authorities differ as to the relative merits of the two methods, it would seem for the present to remain an open question, each side having its advocates.

FERRIS & MILES,

of Philadelphia, exhibit but one machine which can be classed under this head, the principal part of their business being the manufacture of machinists' tools and steam hammers. machine referred to is a lever punch, which, although entirely different in the design of the housing, bears a resemblance in the method of obtaining the motion to the machines before described. It carries the punch and die at the extreme front of the machine, which is very narrow, thus enabling the punch to work in narrow flanges, ends of flues, and other parts which cannot ordinarily be reached by punching machines, and consequently have to be drilled, which is a rather expensive opera tion on boiler work. The machine is rated for 3/4 in. hole in 3/4 in. iron, 24 inches from edge of sheet.

C. A. & W. L. TEAL. Philadelphia. This firm make a specialty of all machinery used in the equipment of boiler shops, and by iron ship and bridge builders. They have for some time past been engaged in making radical changes and improvements over the old styles of machinery, and, judging by their exhibit, it would appear that the effort has met with marked success. Embodying in the machines the requisites of good workmanship. strength and durability, power, facility of adjust ment, &c., another noticeable feature of the utmost importance, which has heretofore been partially overlooked, and which attracts considerable attention from visitors, is the simple and efficient means for taking up the unavoidable lost motion caused by wear of the moving parts, wherever it can possibly impair the working of the machine. Symmetry of design (a point not to be despised) has not been neglected, although excessive finish is avoided as inappropriate in tools of this class. The exhibit consists of one combined punching and shearing machine, one lever punching machine, one set of desirable quality of simplicity of construction. The throats are 17% inches deep from center of punch, and 20% inches from edge of shear. The motion of the heads is derived from econtric pins on main shaft. Each head has an independent stop motion. The machine will punch 1 inch hole in three-quarter inch iron and shear three-quarter inch plate. The single punching machine (lever) is of the "horseshoe" pattern of housing, and is designed for heavy work, the capacity being 2 inch hole in three-quarter inch plate. The single punching machine (lever) is of the "horseshoe" pattern of housing, and is designed for heavy work, the capacity being 2 inch hole in three-quarter inch plate. The shead is of wrought from. Both are arranged for resolving machine (lever) is of the same pattern in regard to the points patented by the firm. Both are arranged for resolving down the housing, the roll being supported and perfectly free from bearing to bear-not an extended the properties of the same pattern in regard to the points patented by the firm. Both are arranged for resolving down the housing, the roll being supported and perfectly free from bearing to bear-not always to the points are the properties of the same pattern in regard to the points patented by the firm. Both are arranged for resolving down the housing, the roll being supported and perfectly free from bearing to bear a pattern of the properties of the same pattern in regard to the points patented by the firm. Both are arranged for resolving the properties of the properti 11-16 inch iron. The head is of wrought iron, ing. By means of a very simple device this can machine.

be accomplished very quickly, and effects a great saving in time. As the bearings of the top roll will adjust themselves at any desired argle, the machines may be used for bending

of Wilmington, Del., exhibit a steam riveting machine, an illustrated description of which was given in a recent number of *The Iron Age*. STILES & PARKER,

of Middletown, Ct., exhibit a combined punching and shearing machine (eccentric) having capacity for punching ¾ meh holes in ¾ inch plate 18½ mehes from edge, and shearing ¾ inch plate 18½ mehes from edge, and shearing ¾ inch plate 20 inches from edge. The machine contains some novel improvements, the most important of which are the vertical adjustment of the heads and the patent punch stripper. The former is effected by turning an eccentric sleeve or bushing in the vibrator which forms the bearing for the eccentric pin. A flange on the outer end of the bushing contains gear teeth of fine pitch which extend to one-half of the circumference, thereby enabling it to make one-half revolution. A pinnon upon the end of a T wrench serves to turn the bushing until the punch or shear are at the proper hight, when, by tightening a nut at the top of the vibrator, the latter clamps upon the bushing, bolding it firmly in position. The punch stripper is made by means of a universal lateral motion, to adjust Itself to inequalities of the iron, thus preventing twist or side strain which so often causes the breaking of punches while stripping. Another important feature of this machine is the adjustable automatic stop motion of the head, which allows the punch to stop on the return stroke at just sufficient hight above the iron to enable the latter to be moved freely. of Middletown, Ct., exhibit a combined punchfreely.

THE DOTY MFG. CO.,

THE DOTY MFG. CO., of Janesville, Wis., make a display of several sizes of combined punching and shearing machines for hand and power. The motion is derived from a powerfully geared lever, and is utilized at every available point. Bestde the punch, which occupies the ordinary position, there are three shears, each of which is independent of the others, and which are located as tollows: Back of the fulcrum pin of the lever a hole in the latter and a corresponding one in the housing forms a bar shear. At top of the punch head is a shear for plate iron of moderate width, while on top of the housing is another, the movable blade of which is carried by the lever for shearing double the width and one-half the thickness. These machines appear to be a very convenient arrangeclines appear to be a very convenient arrange-ment for jobbing shops, or where miscellaneous work is required.

R. S. NEWBOLD & SON,

Eagle Iron Works, Norristown, Pa., exhibit a rotary shearing machine for tube plate and boiler plate of the lighter gauges. This machine is very valuable where a continuous straight cut is required, as is the case in rolling mills engaged in the manufacture of sheet or thin plate iron. By clamping the iron process. ing mills engaged in the manufacture of sheet or thin plate fron. By clamping the iron upon the carriage of the machine, it may be edged or cut into widths very quickly, and with a smooth, clean cut. There is also exhibited another rotary shear of smaller size, which, by means of a revolving carriage for holding the work, may be used for cutting circles, the position of the carriage in relation to the shears regulating the diameter.

W. H. STEVENS TOOL CO.,

East Brookfield, Mass., show a powerful shear for cutting T rails, and another of smaller size for round or square bar.

for round or square bar.

AMERICAN SAW CO.,

Trenton, N. J. This company, in addition to their display of toothing presses, have on the opposite side of the alsie to the main exhibit a horizontal nut punching machine which, by means of two independent motions, is capable of making washers and nut blanks complete at one operation. As the working parts are principally inside of the housing, the details of the construction of the machine cannot be seen, but judging from samples of the work it appears to be very efficient. OLD COLONY RIVET WORKS,

New York, exhibit among other articles, a number of hand-power punching and shearing machines, which, by the use of Broadbook's patented mechanical movements, have an astonishing capacity. The latter is gained by the use of a combination of the rolling wedge and compound lever, which, it is claimed, render these machines the most powerful of, their class. On the large sized machine, with a lever 3 feet 8 inches long, one man can cut 1 inch thick by 5 inches wide.

D. L. KENNEDY,

of New York, also displays a number of hand-power machines, having a compound lever mo-tion, which appears to be capable of develop-ing great power. By a differential toggle on the shear lever, the latter will cut as easily at the end of the blades as close to the fulcrum. Mr. Kennedy exhibits, in addition to the above, a number of different sizes of his patent spiral pounted numb. pointed punch.

WESTRAY, COPELAND & CO.,

WESTRAT, COPELAND & CO., of Barrow-in-Furness, England, exhibit a combined punching and shearing machine (Beesley's patent), designed expressly for the use of boiler makers. The peculiar feature of this machine is that by the use of a T lever receiving motion at the end of the vertical arm an alternate action of the two heads, containing respectively punch and shear, is obtained, while the strain occasioned by the pressure is transferred from the bousing to the lever, which, being of wrought iron, the manufacturers claim to be less liable to injury than the cast fron housing. wrought from the manufacturers claim to be less liable to injury than the cast from housing. The machine is very simple in construction, about one-half of the housing and the driving shaft gearing, &c., being below the floor in a pit, walled, and floored with cement. By means of using a die considerably longer than the punch, the machine punches a hole of sufficient taper to answer as a countersink for flush rivets. The hear head carries at its top an attachment for cutting angle iron 4x4 in.; while, from being set at an angle with the housing, it allows of shearing plate and bar of a length greater than the depth of the throat. The capacity of the machine is 1 inch hole, 1 inch plate, 23 inches wide. 23 inches wide.

L J. FISHER & CO.,

Kincardine, Ontario, Canada, display a machine for beveling the edges of boiler sheets, which prepares them for caulking without the neces-sity for the slow process of hand chipping. The machine is very simple, having a sliding head carrying a shear blade whose cutting edge The machine is very simple, having a sliding head carrying a shear blade whose cutting edge forms a much smaller angle than is usually employed. The head receives motion from an ordinary sliding cam operating a lever, and having convenient stop motion. The angle of the cut is acquired by inclining the whole machine, the bearing plate, which takes the place of the lower shear blade, being horizontal. By the use of this machine the sheets are cut to the required shape, and beveled for caulking in the one operation, thereby affecting considerable saving in time and labor, beside doing the work better than can be done by hand. In the Belgtan department is a machine for punching hot pressed nuts, exhibited by N. H. Nigasse & Co. and Aug. Gobert Fifs, La Lonvette, Belgium. By means of two sliding cams, acting alternately upon the two punches, a complete blank is punched at each stroke of the machine.

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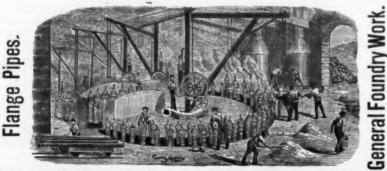
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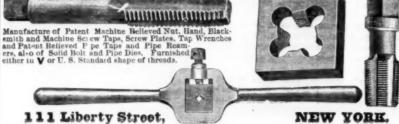
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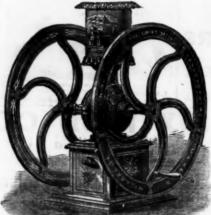
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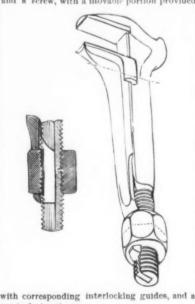
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patents, recently issued, from the official rec-

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To Robert H. McCormick and William R. Baker, Chicago, Ill .- Said Baker assignor to said McCormick. Patent No. 166,020, dated July 27, 1875.-June 13.

1. The combination of the main portion of the wrench provided with a jaw, guideways, and a screw, with a movable portion provided



nut inclosing the two.

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To L. Hornblower, Liverpool, England .- June 20.—Iron girders and plates, earthenware hollow cores, concrete filling, and woven wire are —June 6. combined in an improved manner, to form the walls, floors and ceilings of fire-proof build-

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3. The combination of girder h, earthenware

tubes i, concrete j, and carriers k.

earthenware tubes m and concrete n.

5. The U-shaped pieces a, connected back to 188,519.—Stove Pipe Eldow Machine.—Henry back by bolts b, in combination with wire work

secured to the flanges of the pieces a. 6. The U-shaped pieces a, connected back to back by bolts b, in combination with hollow oncrete filling.

PIPE WRENCH. To Thomas Booth, Toronto, Canada.-June 20.

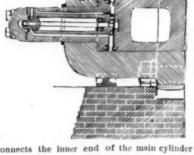


faces B2, in combination with the lever A2, provided with the slot C and notches

2. The jaw A1, provided with the face a, between the forked ends a a, finished parallel with the faces B of the pin B.

HADRAULIC DRAWBACK.

To Coleman Sellers, Philadelphia, Pa. - June 20. -Arrangement of conduits by which equal pressure on both sides of the drawback piston is exerted during the forward movement of the In a hydraulic drawback, a conduit which



with the outer end of the drawback cylinder, in combination with a conduit which connects the inner end of the drawback cylinder with the accumulator or pump.

178,250.—Lock for Safes, &c. - William L. Potter, Mechanicsville, N. Y .- June 6.

A rubber pad or cushion is so arranged as to receive any inward thrust of the knob spindle to the latter is nearly or quite absorbed by the cap.

178,251. - Sectional Steam Generator. - David Renshaw, Cohasset, Mass.-June 6.

178,252.—Apparatus for Melting Metals and Ores. -George W. Stafford, Postville, Iowa .-June 6.

178,254 .- Dust Trup for Smelting Furnaces. Thomas J. Taylor, Eureka, Nev.-June 6,

178,270 .- Screw Cutting Die Plate. -J. M. Car penter, Pawtucket, R. I.-June 6

We take the following abstract of new 178,279,-Hammer.-Charles W. Dunlop, Brook

lyn, N. Y .- June 6 178,280,-Metallic Serem .- S. W. Flint, Boston

Mass .- June 6. 178,288,-Auger Handle,-G. L. Gibson, Repo

178,350,-Machine for Boring Metallic Cylin ders .- Franklin B. Trahern, Rockford, Ill. --

Centering chucks with V shaped prominences one of which can be swung back on hinges when a new cylinder is to be inserted) for holding the article to be bored; automatic (and also hand) devices for feeding the chuck holding carriage and cylinder slowly along the boring bar; a weight for counter-balancing that of the carriage, and an automatically operating belt shifter, for transferring the belt from the fixed to the loose pulley when the

work has been completed. 178,356.—Self-Closing Hatchway.—S. W. Bell,

Burgettstown, Pa.-June 6. The batch is of the kind that is opened later

ally by the passage of the car, and closed by weights or springs, and is made to fold up in sections to economize space where the hatchway is inconveniently near to a wall. 178,358.— Weigh Scale.—Alanson Carpenter, An

gola, Ind.-June 6.

178,406 .- Seal Lock .- Walter P. Burrow, Nor folk, Va.-June 6.

178,407 .- Claw Bor. - Meshach Butts, Shawnee, Ohio.-June 6.

The handle of the claw bar is bent. 178,408 .- Wrench .- Joseph N. Byington, Wing-

na, Minn.—June 6. 178,409. - Screw Cutting Die. - John S. Camp bell, Astoria, and Thomas T. Eyre, Salem,

Oregon.-June 6. 178.450.—Insertible Saw Teeth.—E. T. Lippert.

Millvale, Pa.-June 6. The tooth is held in position by a wedge, which forces it outwardly into the curved jaws

of the recess in the saw plate. 178,311 .- Combined Stop Cock and T Joint .-Edward A. Leland, New York.-June 6.

The herein described new article of manufacture-the combined stop cock and T jointcomprising the T joint, the stop cock and the extended ends tinned or speltered and made

The pump handle is so connected to the pump shaft that when the handle is applied to said shafting the shaft is detached from the pitman of the windmill, and the connection with the windmill restored upon the withdrawal of the handle, the object being to operate the pump either by one or the other, as the occa sion may require.

178,401.-Sad Iron Holder .- Ole Borresou, La

Crosse, Wis.—June 6.
Strips of wood attached to a sheet of leather or canvas, with a metallic shield for the hand, to intercept the radiated heat.

Hamburg, Iowa.-June 6. The insertion of the iron closes the lids and

its withdrawal opens them.

4. The combination of column l, surrounding 178,483.—Fire Pot for Stoves.—David L. Stiles, Rochester, N. Y .- June 6.

Fisher, Cincinnati, Ohio. -June 13. A pipe is passed over the head of and on to a cylinder, and is clamped to a sliding frame by a cam lever. An inward tuck is formed on tubes c, interposed between the pieces a and the pipe, at that portion of it covering the a semi-circumferentially grooved ring, by means of a beaded claup. The side scams of the pipe being open, it may be loosened and fed forward -1. The pivot pin B, provided with the flatted by the sliding clamp operated by a ratchet and pawl. The tuck is then crimped and folded over by an expansible and partly oscillating head, operated by a lever, eccentric and rod, pressing it backward and over on to a former on the grooved ring. A second adjustable clamp relieves the expansible head from strain 178,547.—Water Heater for Stoves and Ranges,—

Jas. E. Montell, Baltimore, Md.-June 13. 178,549.—Method of Tubing Wells.—D. L. New comb, Kenton, Ohio.—June 13.

The method or process of tubing or lining wells, consisting, first, in temporarily suspending in the bore or shaft of a well previously excavated the sections of tile, sewer pipe, or other lining between two strips of metal, wood or their equivalent, or a series of such during the process of tubing, and then permanently suspending the column of tubing or other lining in the bore or shaft between said supporting devices, or a series of such.

178,561,-Sad Iron Heater,-Robt. Reed. Philadelphia, Pa.-June 13. 178,617 .- Pipe Cutter .- James M. Evarts, New

Haven, Conn.—June 13. 178,708.—Fire Shovel.—Alfred Bardell, Brooklyn, E. D., N. Y .- June 13. The handle has a depression, which affords a hold for the thumb, and also serves to strength-

en the handle. 178,735.—Chain Pump Churchill, Council Bluffs, Iowa.—June 13. 178,738.—Rain Water Cut Off.—Lodwick U.

Crary and Archibald Crary, Middleport, Ohio. -June 13. 178,759 .- Gas Cock and Valve .- Charles A. Ger

denier, Bridgeport, Conn.—June 13. 178,764.—Heater.—James E. Gridley, St. Paul, Minn.-June 13.

The air is heated in the flues, and, passing to the reservoir, is deflected around the sides of of a lock, whereby the force of blows applied the drum, and makes its exit through the

The following designs were recently patented in the U. S. Patent Office

9831.—Stoves.—Appollos Richmond, Brooktyn, Conn.-June 6.-Term of patent 14 years. 9343.—Cooking Ranges.—George A. Wells and John P. Hogan, Troy, N. Y., assignors to

Fuller, Warren & Co., same place,-June 14 Term of patent 7 years,



The American File Company have the exclusive right to use the Bernot process for cutting files By this method all the advantages of hand cutting are secured, together with an accuracy unattainable in hand work. They are the only manufacturers who employ machinery for testing files and steel.

Goods of all known manufacturers have been repéatedly tested, and interesting tables have been compiled showing the work ing qualities of nies raade by different makers, and of files made from different steels, and with various shapes and angles of tooth They have thus reduced the manufacture of files to an exactness and perfection with a uniformity of result, as they believe, never pefore attained No file, foreign or domestic, that they have ever tested, has equalled the performances of their own goods taken random from their stock. Their machines are capable of the most delicate adjustment, and can produce the very finest work k nown to the trade. Special files made to order. Prominent file manufacturers are having their best goods from our works. Price lists and information furnished on application.

AMERICAN FILE CO., Pawtucket, R. I.

THE BEST IS THE CHEAPEST.

McCaffrey's Standard American Hand Cut Files and Rasps are warranted to

do more work than any other files and rasps in the market. TRADE MARK. HIGHEST PREMIUM.



No. 1732, 1734 & 1736 North Fourth St., Phila.

ESTABLISHED 1848.



AUBURN FILE WORKS. Superior Hand-Cut

MADE FROM IMPORTED STEEL. EVERY FILE WARRANTED. **FULLER BROS., Sole Agents,**

89 Chambers and 71 Reade Streets, N. Y

ELIAS G. HELLER. PETER J. HELLER.

EREBROG We invite the attention of the trade to our Celebrated American

MM Horse Rasps

HAND-CUT. Manufactured by JOHNSON & BRO.



Putnam's Government Standard

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Manufactured from the best of NOR WAY Iron d warranted to give entire satisfaction.

S. S. PUTNAM & CO., NEPONSET, MASS.



ROMER & CO., ablished 1837. Manufacturers of Patent Scr Jail Locks. Brass Pad Locks for Rall tohes. Also, Patent Stationary R. R.

Hiscox File Manufacturing Co.,

WEST CHELMSFORD, MASS.,

MANUFACTURERS OF EVERY DESCRIPTION

OF-

FILES and

RASPS.

Alfred Field & Co., 93 Chambers & 75 Feade Sts., NEW YORK CITY, GENERAL AGENTS.

All Goods Warranted.

Black Diamond File Works.



RNETT. 39, 41 & 43 Richmond St. Phila, LINFORTH, RELLOGG & CO., G. & H. BARNETT.

Sole Agents for the Pacific Coast, 3 & 5 Front St., San Francisco, Cal. St. Lonis, Mo., SEMPLE, BIRGE & CO., Agents. THOS. TAYLOR, 43 Chambers St., N. Y., Agent for N. Y. and N. E. States.

Established 1816.

Peter

95 Fulton Street, New York,

Thomas Turner & Co.'s Suffolk Works, SHEFFIELD.

FILES AND HORSE RASPS,

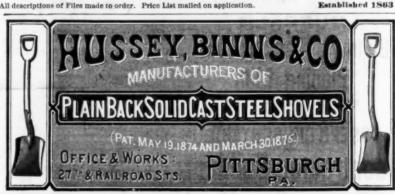
And Importers of

Z STUBS' FILES, TOOLS & STEEL,

W. J. Davies' Sons' London Emery Cloth, HUBERT'S FRENCH EMERY PAPER.

FILES

187 Tenth Street, Williamsburgh, New Y



Nails, Shovels, Spades, Scoops, &c. SOLID CAST STEEL GOODS MADE TO ORDER.

Warehouse, 211 Pearl St., N. V.

A. L. REID, Agent.

Warehouse, 103 Chambers Street, NEW YORK.

Manufacturers of

Hatchets, Adzes, Grub Hoes, Mattocks & Picks.

Sole Manufacturers of the "WASHOE" PICK. Catalogues and Price Lists furnished upon applicatio



ocket Firmer, Framing, Corner, Coach Makers' & Farmers' Socket Chisels, Carpenters' Slicks, Tang Firmer Chisels & Gouges, Socket Gouges, Miliwrights', Paring & Turning Chisels & Gouges, Hazor & Oval Blade Coach Makers', Wagon Makers' & Farmers' Brawing Knives, Shingle Shaves, Carving

Manufacturer of

Tools, Boring Machines, Tool Chests, Awi Blades, Brad Awls & Tools, Peg Breaks, Awi Hafts, &c.

Consult your interest by sending for our prices before placing your Fall orders. GEORGE PARR,

- - Buffalo, N. Y. BROWNS







HOC AND PIC Ringer and Rings. Only Single Ring that closes on the outside of the nose. No sharp points in the nose to keep it sore.



TAUNTON, MASS., Manufacturers of

COPPER & IRON TACKS, TINNED TACKS,

SUPERIOR SWEDES IRON TACKS. for Upholsterers' Use, Saddlers' Supply, Card Clothing, etc., etc.

American and Swedes Iron Shoe Nails,

Zine and Steel Shoe Nails, Carpet, Brush and Gimp Tacks, Common and Patent Brads. Finishing Nails, Annealed Trunk and Clout Nails, Hob and Hungarian Nails, Copper and Iron Boat Nails, Patent Copper Plated Tacks and Nails. Fine Two Penny & Three Penny Nails, Channel, Cigar Box & Chair Nails, Leathered Carpet Tacks, Glaziers' Points, Etc. OFFICES AND FACTORIES AT TAUNTON, MASS. WAREHOUSE AT 78 CHAMBERS STREET, N. V., where may be found a full assortment of Tacks, Brads, &c., for the accommodation of the New York Wholesale and Jobbing Trade.

Any variations from the regular size or shape of the above named goods made from samples, to order.

Crane Bros. Mfg. Co

COOKE & BEGGS, Agents, 16 Cortlandt Street, New York.

CHICAGO.

SPRING BALANGES. Is now Ready and will be sent to the trade of addication to John Chailland Grants & Ch.



CLARK & CO.'S

PATENT Self-Coiling, Revolving NOISELESS

SHUTTERS FOR

Store Fronts & Rear Windows. FIRE AND BURGLAR PROOF. Also, SELF-COILING

Wood Shutters In various kinds of wood, suitable for Store Pronts Private Houses, Offices, and School Partitions.

The Best & Cheapest Shutters in the World.

Ail heal Estate owners are invited to inspect them at the factory, 162 & 164 West 27th Street, New York. And at London, Paris, Vienna, Mel-

bourne, &c. Champion Centennial MATCH SAFE. Exposing one match at a time.
Plain, \$30 per gross.
Ornamental, \$36 per gross.
Agents wanted in every
county throughout the State.
PRICE EVANS,



DOUGLASS

P. O. Box 2610. New York Warehouse, 62 Reade Street. FACTORIES, Seymour, Conn.

COOK'S BORING IMPLEMENTS.



and Bits. Discounts remain unchanged.



Chisels, Gouges and Drawing Knives of all kinds, Screw Drivers, Screw Driver Bits, Cook's and Douglass Mfg. Co.'s Augers & Bits, Wood and Metal Head Gimlets, Improved Hollow Augers, Blake's Patent Extension Bits, Boring Machines, Chisel Handles, Wood Boxes, Tool Chests.

Our New Catalogue, issued July 1st, will be furnished upon application.



THE HURRICANE FORGE. (PATTERSON'S PATENT.)

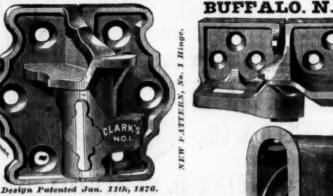
Also Stationary Forges.

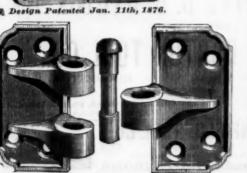
Large Size, superior to stone or brie's. Can be used with bel ws or fan. Send for prices and further information to GEORGE PLACE, General Agent



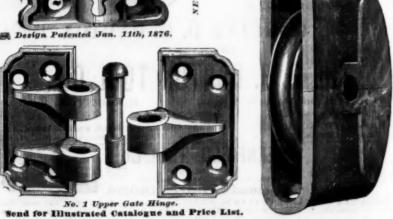
CLARK & CO.,

BUILDERS' HARDWARE.





No. 1 Upper Gate Hinge.



BUSINESS ITEMS.

MASSACHUSETTS. The Globe Horse Nail Company, of Boston, have issued on a large scale a handsomely printed and illustrated circular: it is one of the outgrowths of this Centennial year, and shows at the head a good picture of their im mense establishment, with a vignette on cacheside representing the difference in manufacture ing these goods in 1776 and 1876, one showing a blacksmith working at his anvil in 1779 making 6 pounds of finished nails per day, the other showing a nail machine in 1876 with : espacity for 500 pounds of finished nails daily The circular also presents interior views of three departments of their works, showing large number of nail machines with their female attendants, the packing room also under the charge of female labor and the beavier preparatory branches operated by mas culine belp. The greater portion of this circular, which is printed on a sheet 24x42 inches, is devoted to flattering testimonials from United States cavalry shops, and extracts from private letters testifying in handsome terms to the superior quality of the Globe horseshoe nails also contains the following testimonial, ich is signed by about 1300 practical horseshoers in different sections of the country These nails, pointed, polished and finished, ready for driving, are used in our shops, and give entire satisfaction. The peculiar process of manufacture, being cold rolled, gives them a stiffness and a uniformity in thickness, length, width and points. They are thinner and lighter can be more surely driven without bending and clinched without breaking, than those made by any other process. Such is their uniformity and perfection of finish, that no loss is suffered by hammering, pointing or imperfection. The process of manufacture hardens the points so as to prevent danger of turning or 'pricking,' thus giving such confidence to the shoer as to enable him to work much more rapidly than with other nails. Their stiffness is such as lo prevent 'upsetting,' doubling or bendung-faults so common with other nails. The point being made perfectly even and uniform, and thinned on both sides alike, gives them a smoothness, brightness and cleanness which insure that the shell of the hoof shall not be broken when they are driven, nor the hoot rusted or 'burned' while they are in use. By this means are avoided many difficulties caused by other nails when driven too close to the sen-sitive part of the foot. If 'pricking' occurs by carelessness, they will not cause inflammatio and pain as would an uneven, rough or scaly nail. With these nails a set of shoes can be driven on as soon as a person can hammer and point a set of other nails, and we can put onefifth more nails to the pound in the hoof that of such as we are obliged to hammer and point. We find them the thinnest, most convenient

are the best and most economical nails now in use, and have ail the merits the manufacturers claim for them."

The Washburn & Moen Manufacturing Company, Worcester, have abandoned the Eames process of puddling and scrapping by the use of petroleum, the results not being satisfactory.

and safest nails, both for the shoer and for the

animal. In short, we are of opinion that they

of petroleum, the results not being satisfactory.

The Bridgewater Iron Company are running with a much reduced force, and the cotton gin shops are doing but little. The foundry of Henry Perkins is largely engaged in the manufacture of plano plates, and has been doing a fair business during the season.

The Mount Washington Glass Company was organized at New Bedford on the 28th uit., at a meeting of the stockholders. The new stock is all subscribed, and the new company will buy and continue the business of the Mount Washington Glass Works.

and continue the business of the Mount Washington Glass Works.

The Wire Works of Washburn & Moen, Worcester, are running quite full. Special orders are not as plenty as they have been, but or telegraph, fence and stove wire they have been running double.

The new oil stoves made by the Florence Sewing Machine Company are doing well, over 1500 having been shipped the past month. The toundries are running 14 hours daily, and as soon as new patterns can be completed the Sheffield foundries, which have been closed for some time, will be rented by the company, and worked to their full capacity. Several thousands of the spring skates made by the company are in hand, and a lively fall trade is anticipated.

CONNECTICUT.

CONNECTICUT.

The Yale Lock Company, of Stamford, have lately completed an extension of their works for the purpose of giving increased capacity for the manufacture of the Yale cabiret locks for drawers, desks, cheats, &c. Until lately they have been employing 175 men, and report larger sales this year than for the same period of any previous year. As the officers of the company desired or type they employed a change of any previous year. As the officers of the company desire to give their employes a chance to visit the Centennial, it is proposed to close the works during the third week in August. As before mentioned in these columns, the Yale Lock Company have sequired control of the Weston and other patents relating to differential pulley blocks. The only parties who have ventured to infringe were restrained by a recent decision of the United States Circuit Court for Connecticut, and they have since go:c out of business. The decision in question, affirming the validity of the Yale Lock Company's patents, will probably protect them in future against further infringements. It is in future against further infringements. a matter of interest, not generally understood, that purchasers, as well as manufacturers of goods which are made in infringement of a valid patent, are liable in damages. NEW YORK.

NEW YORK.

The E. D. Clapp Manufacturing Co., of Auburn, N. Y. (formerly E. D. Clapp & Co.), has been organized as a stock company with a paid up capital of \$150,000. E. D. Clapp is president; L. E. Carpenter, vice-president; D. E. Clapp, secretary; F. Van Patten, superintendent. The company manufacture over 40 lines of goods, including every piece of hardware used in ironing a carriage except springs and axles. In the future as in the past Messrs. Hayden & Smith will have the exclusive sale of goods made by the company. From 80 to 130 men are employed in the works.

NEW JERSEY.

NEW JERSEY.

PENNSYLVANIA.

An exchange says: The Harrisburg Mills are all on, and seem to have plenty to do. Balley's Mill is paying the hot dollar. Paxton's gives a

draw every week to the married men, which hey claim is an equivalent for the hot dollar, The pay clerks think that since the draw system was introduced everybody in the mill is mar-

The stewart Iron Company is shipping about 50 tons of pig iron per day.

At Keel Ridge Furnace the workmen are engaged in tearing down and puting up things. The turnace has been cleaned out, all but the back-wall, and a new lining, hearth, &c., will be put in as soon as possible. It is intended to raise the bustle pipe (a much needed improvement), and otherwise removate her. Two new hot blast ovens are to be built at right angles with the stack. The rolling mill is working along smoothly. The heavy machinery is all in place at the new hoop mill, which will be ready to start ma few weeks. At Westerman's the "puddle mill" was off for three days taking stock; all other branches were working. Bast Furnace No. 1 is still undergoing repairs, and No. 2 is working up to 34 tons a day. M. C. Herron did not assume the management of these furnaces as was reported. Mr. E. T. Reed gave up the management Aug. Ist, and goes to Middlesex to take charge of the Shenango furnaces, one of which is to blow in on Monday.—Sharon Herald.

The furnace at Wampun, Lawrence county, "blew out " for repairs last Friday.

A company is about to prospect for oil in the vicinity of West Middlesex. It is the intention to lease 5000 acres of land.

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A company is about to prospect for oil in the vicinity of West Middlesex. It is the intention to lease 5000 acres of land.

The thimburg from Works, Hamburg, are using the Henderson process entirely. The from made at this mill is taking the place of English irons for drop forgings and sampings, especially for pistoi work and cotton machinery.

Furnace No. 1, of the Cambria Iron Works,

chinery.

Furnace No. 1, of the Cambria Iron Works, at Johnstown, was blown in on Bessemer pig on the 2d inst. This is the third furnace of this corporation run exclusively on this grade

PITTSBURGH AND VICINITY.

The Sable fron Works (rolling mill and nail factory), of Zug & Co., were sold at auction recently, and was knocked down to Mr. A. F. Keating, for the sum of \$170,000 cash. Mr. Keating has been the book-keeper of the establishment, and it is understood that the property was purchased for Messrs. McIntosu, Hemphill & Co., and others, including Mr. Keating, Mr. Samuel Jack, business manager, and Mr. Charles Zug. The price paid, although only about one-third the original cost of the mill, is satisfactory to the creditors, and considered good by those engaged in the iron business, in view of the general depression, and the fact that the sale was for cash. There was great rejoicing among the mill hands and others residing in the vicinity of the mill, as it was given out that the new proprietors would

great rejoicing among the mill hands and others residing in the vicinity of the mill, as it was given out that the new proprietors would have the mill in operation inside of thirty days. The mill is one of the largest and most complete in the country, and the resumption of operations cannot full to prove highly beneficial to a large number of persons.

The old mill of Lindsay & McCutcheon was totally deetroyed by fire on Friday last. The fire originated from a furnace stack, the sparks therefrom lodging in the roof of the building beneath the iron sheeting. There were three engines in the old mill. The stock on hand embraced thirty tons of crucible clay, which, together with fixtures, amounted to \$1500. The damage to the building is about \$5000. The mill property, uside from that already mentioned, covered a space of about 150 by 600 feet, including a hoop iron works and rolling mill. The value of the property destroyed is about \$70,000, on which the insurance was \$2,500. The new mill was uninjured.

The Keystone Bridge Company is busy.

The Sharpsburg Sheet Mill is busy day and night.

The puddlers at Hussey, Wells & Co.'s have

right.
The puddlers at Hussey, Wells & Co.'s have

rone to work.

Jones & Laughlins' Mill has shut down for

repairs. Shoenberger's Mill has shut down for three

Shoenberger's Mill has shut down for three weeks for repairs.
Chess, Smythe & Co., Southside, have shut down their mill for repairs. They are about to build additional boiling jurnaces, which work will be pushed forward rapidly.
The sheet mill of the Sligo Iron Works started up Mouday. The entire works will resume operations in two weeks.

VIRGINIA.

We learn from the Philadelphia North American that the Atlantic Iron Works, near Norfolk, have been leased by a New York manufacturer, who has purchased the machinery, and is backed by a Northern company of capitalists interested in shipbuliding. The enterprise promises some increase in iron activity and a very useful increase in the construction of iron ships. A marine railway will be constructed at once, The building and repairing of ships will be the principal industry, which cannot fail to increase hereafter in harmony with the general welfare.

welfare.
The Longdale Furnace is blown by an engine operated by water pressure instead of steam.
The head is 78 feet.

The Wytheville Enterprise of July 26th says:
"The new furnace of Crockett, Sanders & Co.,
at their Raven Cliff Furnace, was completed
a short time since, and on the 1st inst. the fires
were lighted."

The Wheeling Intelligencer says: "It is said The Wheeling Intelligencer says: "It is said that more nails were manufactured in this city during the last six months than ever before during the same length of time. We have the figures of three or the principal factories, as follows: Riverside, 146,300 kegs; Belmont, 130,000 kegs; Top, 126,000 kegs; The product of the other mills was in proportion to the above, according to the number of machines in operation. Wheeling has justly earned the name of "Nail City." tion. Wheeling has justly earned the name of "Nail City."

The Benwood Company have rented the Ohio

City pail mill for another month from August

OHIO.

The Jefferson Nail Works, Steubenville, shut down on the 1st instant for repairs.

Onve Furnace has been in blast for about four

weeks, and is doing splendidly.

The work of shoveling out the Iron and Steel
Furnace has been completed, and the furnace
will blow in the first part of next week.—Iron-

ton Register.

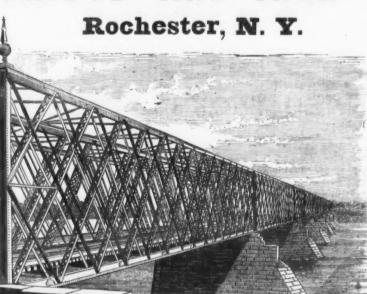
Iron ore is being shipped from the Marfield Place, at Vinton Station, to Wellston Furnace. This ore is said to be superior to any found in the vienity of Wellston. Mr. J. A. Higgins is the superintendent of the mines.—Vinton Record. is the superintendent of the mines.—Vinton Record.

Stockwell, Bragg & Co., Ravenna, are steadily

enlarging their business, in order to supply the enlarging their business, in order to supply the demand for their various screw cutting machinery. Orders for their "Magic Screw Plates" and "Eureka (brace) Threaders" are rapidly increasing. On the 14th instant they shipped a case of these tools, to fill an order, to M. Selig, Jr., & Co., London, England, and they anticipate a large trade across the water.

Emma Furnace, of the Union Iron Company's Works still remains banked up and in excellent condition. She will outdo her former exploit, as she has already exceeded the time (seven nonths), during which she was banked a year ago.

CO., SALESROOM, 117 Chambers St., N. Y. FACTORY, Fairhaven, Mass. AMERICAN Upholstery, Gimp, Brush, Card, Pail and Cheese Box Tacks; Leathered, Tinned and Iron Carpet Tacks; Bright and Blued Pinishing Nails; Cigar Box and Chair Nails; Trunk and Clout Nails; Brads, Patent Brads, Copper Tacks and Nails; Iron, Zinc, Steel and Copper Shoe Nails; Polished 2d and 3d Fine Nails; Roofing and Slating Nails; Roofing Tacks, Tinned Tacks and Nails of every variety. Also, Bright and Japanned Lining and Saddle Nails, Tufting Buttons and Nails of any color Any size or style of Tack or Nail made to sample. Orders sent to either Factory or Salesroom will receive prompt attention.



WORKS,

Wrought Iron Riveted **Lattice Railroad**

HIGHWAY BRIDGES.

Wrought Iron WATER PIPE.

factured for Water Works, Oil Lines or Gas Mains

General Riveted Work

Orders Solicited from Civil Engineer and Contractors.

> mpanying engraving represents the Spring field Bridge, built by the Leighton Bridge and Iron Works.]

CO., Bridgeport,

Any Dealer is aware that in an ordinary Hand Saw, the front cut is the effective cut, and drawing back the saw has little effect by reason of the slant edges riding over the fibre, as the Saw is drawn back. The difference between the front cut of a Hand Saw, and the back cut, is the difference between the Lightning Saw teeth and all others; for all other saws are set one point and ride on slant edges. By setting two points of my M the same side and the next two the other, I conceal the slant between them, and operate wholly by the oustide of a nearly vertical M tooth. Standing nearly vertical the two points of the M occupy the same space as the old V tooth. One point only is cutting and the other follows in the slit behind it to cut in the same manner, in the return motion, thus doubling the cut upon the same base and space of tooth. This construction also gives the breadth and durability of nearly an inch of steel instead of a single slender scraping point, and presents the upright instead of the slant edges to the timber. Any one can in a moment test the principle by comparing the front and back cut of any V tooth Hand Saw. My new patent of March 28th, 1876, allows the saw-dust perfect clearance; the arch slightly widening to the points of teeth renders it impossible for green or resinous saw-dust to be retained, while the slightly increased breadth at base of tooth gives the durability so much advocated by parties who have round-edged files for sale. Slightly pyramidal, the outer edges are as upright as the front cut of a Hand Saw, and the back slant cut is concealed in no other Saw than mine, by setting the two points of M to cut in line instead of alternately. Thus by this new Patent I avoid all "overhang or under-cut," avoid all tearing, and to the matchless speed of the Lightning dress and set, add the durability-simplicity of sharpening, and sweet cutting so much admired. I thus adapt the Lightning teeth to universal use, in all Hand, Pruning, Buck, and Cross-Cut Saws. The concave in the centre of the M

\$1000 challenge to any responsible saw manufacturer, to match the Lightning saws in speed of cutting and ease of shadicated by U. S. Court decreeing costs and damages for infringements. Beware? of sharpening. This patent saw tooth has rece POOR GOODS ARE NEVER IMITATED.

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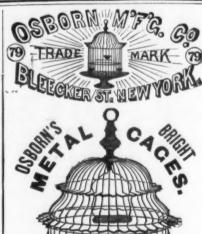
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BUSINESS ITEMS.

(Continued from page 9.)

OHIO,

The forge department of the Lake Eric Iron Works is virtually idle; the mill is running along about as it has been for the past six months, on small orders for merchant Iron.—

Trade Review.

Trade Review,

Joha Russell, a nailer in Brown, Bonnell &
Co.'s Nail Factory, Youngstown, has just cut
251 kees of 20d, nails in 60 hours. This is said
to be a remarkably big run.

All the Jackson furnaces being idle that vil-

All the Jackson furnaces being idle that village is now very quiet.

The Lawrence Rolling Mills, of Ironton, last week, made a shipment of small Trail to the Wurtland, Ky., coal mines. Wurtland still continues to go ahead with her mining operations, in spite of adverse hard times and combinations.

WISCONSIN

A fire at Beloit, on Friday, destroyed John Thompson & Co.'s plow and wagon works. Loss, \$60,000; insurance, \$3000.

MICHIGAN.

The following mining items are from the Mining Journal: "The Erie Mining Company have about 1500 tons of ore on the Kloman docks, which they will begin shipping next week. The ore was hauled from the Erie mine to the Kloman last winter on sleighs. It is to go to Cleveland via Marquette. The Pittsburgh and Lake Angeline mine employ a force of about 75 men, and is making shipments from a stock pile of about 15,000 tons. The product will show an increase over last year. The Appleton Iron Company has gone into bankruptcy. Liabilities, \$200,000. The Republican Iron Company are now employing about 350 men, exclusive of those engaged at "the canul" on the water-power. They are shipping from 800 to 1000 tons daily, and are mining a little more than 500 tons per day, the balance being loaded from stock piles. The average daily produce for the month will be about 500 tons."

The same paper gives the shipment of ore

The same paper gives the shipment of ore from the Lake Superior district for the season up to and including Wednesday, July 26, as follows

Place 218,411 158,848 32,234 Total341,435

Measrs. Means, Culbertson & Means are building a new furnace to be called the "Princess," near William's Creek, about ten miles from Ashland. The site of the new furnace is shout three-fourths of a mile from the L. & B. S. R. R. E. D., and a mile and a half this side of the old "Buena Vista" site, the latter having been dismantled and the stack torn down. The location is a beautiful one, in close proximity to plenty of water, easily accessible to a fine vein of smeiting coal and other minerals, and the Ashland Journal expresses the hope that it will, in course of time, make a reputation equal, if not superior to the mother—Buena Vista—furnace.

Bellefonte blew in last week.

During the first six months of this year Hun-KENTUCKY.

During the first six months of this year Hun-ewell has made 3200 tons of No. I charcoal

iron.

President Murdock, of the Ironton Steel Works, is about to give a thorough trial to the Louisa blackband ore. Articles have been entered into, according to which 2800 tons will undergo a test by October 1st.

The Louisville Rolling Mill Company's "Big Mill" is closed, tocked up and a watchman put in charge, and while he watches the property the proprietors watch for better times. The probabilities now are that the mill will not turn a wheel until the fail of 1877.

A portion of the works of the new Jos. H.

A portion of the works of the new Jos. H. Brown Iron and Steel Company have started

up.
The furnaces of the North Chicago Rolling Mill were blown in the last of July. TENNESSEE. TENNESSEE.

The Chattanooga Iron Company's furusce is now turning out 28 tons No. 1 foundry iron per day, showing a gradual increase in capacity for the last few weeks. It is an excellent quality of foundry iron, and finds a ready market through the West and South.

MISSOURI. St. Louis File Works, Louis Hock proprietor, are running with a large force of hands. The files and rasps made at this establishment are finding a market in the West, South and Southwest, where they have a good reputation.

INDIANA. The Indianapolis Rolling Mill Company have decided not to make any more merchant iron. They have been running the Capitol City Mill.

The blast furnace at Brazil is ready to blow in.

The Terre Haute Iron and Natl Comp

The Terre Haute Iron and Nail Company have J. G. FELL, Phila. been having trouble with their boilers.

The following, which we take from the London Trade Journal, is quite characteristic: Paper duties are not dead yet. Though they have long ceased to exist in England, they are cultivated and maintained in their worst form by some of our foreign competitors. Formerly paper making was a reculiar glory of English enterprise. The raw material was collected from all parts of Europe, worked up in England, and distributed again to all parts of the world. Some of the rag and esparto grass countries have lately become jealous of us. They wish to work up their own raw material. not because they can do it cheaper than British manufacturers, but because they hope to enrich themselves by practically robbing each other. In order to insure native paper mills from being undersold by England at their own doors, the rags or other material is subjected to an export duty before it can leave the producing country, and when it returns in the shape of finished paper it has to pay an import duty.

This system of taking toll at both ends of the bridge is rather too much for English paper Lehigh Valley Coal Co.,

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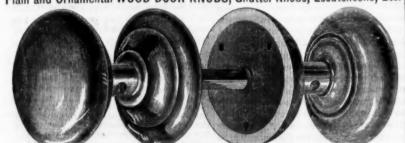
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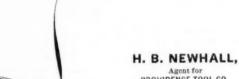
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First Page.—Medizval Wrought Iron Work. The Dexter Carriage Spring. Submarine Operations. Steel Hawsers.

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Sixteenth Page, - The Convention of the Amalgamated Iron and S'eel Workers. Mining and Metallurg at the International Exhibitiop.

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The Amalgamation of Iron and Steel Workers.

The proceedings of the convention of iron and steel workers, held last week at Pittsburgh, and which resulted in the formation of the National Amalgamated Association of Iron and Steel Workers, merits the careful attention of every manu facturer of iron and steel in the country. We have no desire to be regarded as alarmists, nor, on the other hand, do we wish to under-rate the strength of the movement. We believe that, from the very constitution of the association, there is an element of weakness that will in the end disintegrate it and break it up into its original elements : but for the present, at least, these disturbing forces will not be manifest, and this new union will have a power to compel obedience to their terms such as no union in the country has ever possessed. This power will be all the more tyrannically and unreasonably exercised if the supmeness of our manufacturers, or their failure to comprehend the present strength of the union, and to provide for the protection of themselves against its power, shall make them an easy conquest in the first trial of strength which is bound to come.

The only course of safety is for every iron and steel manufacturer in the country tion. The strength of the puddlers here of the work :

tofore has been that they were organized and were ready to act as a unit when the time came. The weakness of the manufacturers was that they had no organization, and were united only as long as their interests led them to be. It is no secret that if the manufacturers had stood firm and united at Pittsburgh a year ago last winter, they would have won. But the interests of one man led him to break away, and the rest followed. Indeed, the arguments in favor of a united action among the manufacturers all over the country are too obvious to need any repetition. The main ones to be advanced against it are strictly and narrowly selfish.

If this is to be undertaken there is need of action at once. It will require time to perfect such an organization, and to have it in order when the time comes to act. The puddlers have by their own act, in the West at least, put off the time for a strike until next summer. They need it to perfect the details of their organization and to prepare for the contest, and the manufacturers can be doing the same. We imagine that such an organization will go far toward preventing the necessity of using it. In previous strikes the strikers have presumed on the fact that the manufacturers were not united, and continued them in hope that some weak one would yield and the others follow. They have also drawn from one section of the country support for the strikes of another. If a strike could be made to mean a stoppage of work all along the line, it would have terrors it does not now possess. On the other hand, manufacturers would be more careful and judicious in their acts. Among reasoning men power always makes one conservative, and the knowledge of the results of a lock-out or strike would lead them to exercise the utmost prudence.

Local Engineering Works,

During the next few years New York and vicinity promise to present many attractions to those interested in great engineering works. Beside the excavations under the Hallet's Point reef, by which the navigation of the East River is to be made safe and easy, we have the great Brooklyn bridge, the tunnel to connect Manhattan Island with the New Jersey shore under the Hudson River, and the bridge to span the Hudson River near Poughkeepsie. The operations at Hell Gate are an old story, and we need give no particulars concerning them. The two bridges and the tunnel are matters of general interest, and a few facts concerning them will, no doubt, be acceptable to many of our readers.

As is generally known, a vigorous effort has lately been made in the interest of the shipowners of this port to obtain a permanent injunction restricting the projectors of the East River bridge from stretching the cables—the plea being that it would impose a heavy tax on commerce by compelling ships passing under the bridge to send down their topmasts and royals, and that it would impede the navigation of the river. It must be conceded that there was much foundation for this complaint, but the plea for a permanent injunction has been denied by the courts. In the test case of Miller vs. The Mayors of the Cities of New York and Brooklyn, and the Trustees of the East River Bridge Company, Chief Justice Johnson of the United States Circuit Court, has decided that there no grounds for an injunction are denied the motion. and As there be appealed from, it is announced that work upon the bridge will go on immediately. The coils of the preliminary The method to be employed is decribed as follows

follows:

The first cable will be placed upon large drums on the top of the Brooklyn anchorage, and after the end bas been carried over the tower it will be conveyed over the river by a sloop or tug, over a large pulley on the New York anchorage, and the end carried back and united with the other, thus forming the first continuous rope, as "traveler" for the conveyance of the larger cables. The clamps for securing the 2% inch steel cables of the temporary bridge were tested on the New York dock a day or two ago. These clamps are of brass, 5 feet long and proportionately thick, with projections for securing them to the mooring of the anchorage. Their inner surface is, of course, concave, and grooved so as to conform to the twisted surface of the cable; they are firmly bolted together. The clamps were fastened to a piece of the rope and a strain of 175 tons applied by steam, and no indication of weakness was detected. Carpenters have nearly completed the flooring of the foot-bridge. It is made in sections 12 feet long and 4 feet wide, and consists of a heavy oak lattice work firmly clinched. After the two 2% inch ropes are ready it will be advanced along them from either side, the sections being fastened together on the tops of the towers, and shoved or pulled either side, the sections being fastened together on the tops of the towers, and shoved or pulled out. They will finally be secured to the ropes at short intervals with strong clamps.

When these preliminaries are completed. to combine in an association that shall be as the work of stretching the main cables will

On the top of the Brooklyn anchorage will be placed 40 drums, each holding enough No. 7 steel wire to span the river twice. These wires will be stretched by the several "travelers," and tigbtened until they have the same deflection. After 330 have been stretched they will be bound together by clamps or wire wrapping every 6 inches, thus forming a bundle of parallel wires. Nineteen of these bundles will constitute the cable. After all are in readiness the first clamps will be removed and the eatire 6270 wires will be bound together by large clamps and wound for their entire length with wire. It will be seen, therefore, that these cables are not twisted, as is generally supposed. Though simple in appearance, the construction of these cables is a very difficult work, and requires great skill. The wind will prevent the work being carried on for about half the working days in a year, for each wire must have precisely the same deflection as the other in the same strand, else it will be of a different length, and thus worse than useless in the cable. To graduate them properly a perfectly calm day is same strand, else it will be of a different length, and thus worse than useless in the cable. To graduate them properly a perfectly calm day is required. On the top of each tower there are four large iron søddles upon which the cables will rest. There is one at each side of the towers and two in the middle. They weigh 14 tons each, and to allow contraction and expansion of the bridge, will have an opportunity to play upon galvanized steel rollers 4 inches in diameter, the rollers resting in large pan-shaped plates, which are secured to the towers. On the sides of the saddles are small grooves for the temporary cables. While in course of construction the main cables will not rest in the grooves of the saddles, but upon large pulleys arranged over them, and upon completion they will be carefully lowered.

The progress of the work upon the bridge

The progress of the work upon the bridge will be watched with great attention by all who are interested in engineering science, and will not be without interest for the general public.

The Poughkeepsie Bridge Company after many difficulties and discourage ments, have at last got their affairs into such shape that they can go ahead with the work this summer. A great deal of the work of preparation has already been done, and there will, we are told, be no delay when the construction has fairly be-The design of Mr. J. H. Linville, Chief Engineer, provides for five spans of 525 feet each, supported on stone piers. The lower chord will be 130 feet, and the grade 190 feet above high water mark. The eastern approach consists of five spans of 260 feet each, and five of 185 feet each, at varying elevations. As the depth of the river at this point varies from fifty to sixty feet, the stone piers will be from 180 to 190 feet in hight, and considering the immense length of the spans, the volume of water crossed and the depth to rock, the building of this bridge will be one of the grandest engineering accomplishments of the century. We shall be

able to give much fuller details as the

work progresses.

Like the East River Bridge, the Hudson River Tunnel has been the subject of much vexatious and costly litigation. The work was begun early in 1875, by sinking a vertical shaft of brick masonry, 30 feet in diameter and four feet thick, between the depots of the Erie and Delaware, Lackawanna and Western Railways. The exact location is the intersection of Jersey avenue and Fifteenth street, about midway between the suburb of Jersey City known as Pavonia, and the lower end of Hoboken. After the excavation had reached a depth of about 20 feet, the Delaware, Lackawanna and Western Railroad Company obtained an injunction, on the ground that the privileges granted in the Tunnel Company's charter infringed the inalienable riparian rights of the State, and by having recourse to the various expedients not unknown to railway lawyers, managed to prevent the dissolving of the injunction until a few days ago. The case has now been decided in favor of the Tunnel Company, the injunctions are removed, and the work is to be pushed forward vigorously. The tunnel will be 26 feet in diameter, and will probably cost from ten to is no likelihood that this decision will fifteen millions. These great enterprises, with the less imposing, but equally neces sary, undertakings soon to be set on foot in the interest of rapid transit within the three-quarter inch cables, made by Roeb city limits, will make New York and its ling's Sons, at Trenton, are now on the immediate neighborhood a point of esground, and are to be stretched next week. pecial interest for intelligent travelers from all parts of the world. Nowhere will be seen as many great undertakings in simultaneous progress within so small a radius, while each will be found to possess especial interest on account of its magnitude.

The Decline in Spelter.

The annual consumption of spelter in the United States in normal times is between 10,000 and 12,000 tons. Our home product averages about this amount, enabling us by degrees to dispense very nearly altogether with the importation of the foreign article. But at times there are periods of prolonged stagnation in the brass industry of this country, and as spelter is chiefly consumed by us in the manufacture of this alloy, it is apt to become so excessively dull while this quiet state of affairs lasts that it becomes very nearly unsalable except at a ruinously low figure, entailing loss to the producer.

In consequence of the mild winter an early spring trade was expected, and with powerful as that of the workers. The only begin. The manner of their making is it the usual animation in metals. Early and servants, but they are not compelled to way to meet organization is by organization is by organization thus described by the engineers in charge in February the combined spelter pro-make the provisions which they know are

currency, in anticipation of the steady dethey looked forward to with great confidence. Copper at the time also stood 23c., based on similar hopes. But the expectations entertained at the time have not the requirement without troubling ourbeen fulfilled. The bulk of the spelter produced since has remained in stock at the works and principal centers of distribution, and there is now little or no vent to this gradual accumulation. The metal is pressed on the market by needy outside parties, and the combination has become of no avail. Prices have steadily declined, and domestic spelter does not at present command over 7c., currency, in the market. The combination proved a decided success isted, and accomplished what had been its discourage importation, but left a living it steadied prices, inspiring the consumer with confidence in the stability of prevailing rates, and causing him frequently to anticipate wants. In other words, the good management of these combined producers lent the domestic article moral and material aid, and our spelter soon gained popu larity and overcame prejudices in favor of Silesian and other foreign sorts. Eventually, this harmonious condition will be restored to the spelter market. Spelter production is one of the elements of national activity which render us independent of the caprices of European fluctuations, and therefore has our full sympathy, the more so as we feel sure that under a general revival in business the uses of spelter can and will be greatly multiplied.

In Europe spelter has become more popular among metal workers year after year, and the amount produced barely suffices to cover the growing wants. Prices over there would have been even better sustained than they were of late, had we been under the necessity of drawing from there the amount we require, as was the case some five or six years ago. Spelter is one of the metals in which consumption is generally admitted to outrun production. Hence the great efforts which the English are unceasingly making to procure calamine even from remoter sources of supply and under difficulties, as they have all along done from the Spanish mountains. Between our own country and Europe there will consequently be no glut of spelter anywhere, as soon as matters begin to revive in a durable manner in both hemispheres, even supposing that we begin to turn out considerably more than we do at present. A proviso would have to be made, of course, as regards some unexpectedly large discoveries in Australia or elsewhere not now apparent ; but as the metal is situated at present, it seems to be safe enough from the moment the usual consumptive demand is permitted to again manifest it-

self in full force. For twenty years past there has not been such a total absence of speculation in a branch of trade which, in ordinary times, attracts surplus capital easier than any other from the imperishable nature of the articles constituting it, and the sense of solidity which thus attaches to them. Not only is there no speculation, but even the trade and consumers decline to venture beyond pressing wants, notwithstanding the fact that metals are, taken together, cheaper now than they have been for the past fifteen years, and money almost a drug. But we firmly believe that the present apparently exaggerated depression will work its own cure by curtailing the production of some metals, if but temporarily. Spelter may be one of them

How to Prevent Railway Accidents.

An item in a recent issue of one of th dailies contains the following: "A railroad disaster in Spain has resulted in a law providing that, when an accident in any way chargeable to the railroad company occurs, the company shall pay \$15,000 to the family of each person killed, \$7000 to the family of each person incapacitated, and \$5 a day to each injured person until recovery.

We can hardly credit the statement, which, if true, shows that Spain, the last of all nations in the way of improvement, has provided the most effective method of avoiding railway accidents which it is possible to devise. These simple provisions are sufficient to insure perfect safety from accidents resulting from preventible causes, even in the absence of all our absurd railway legislation. Were such a law enacted and enforced in this country, and the railroads left free to work in their own way and run trains as they should deem best, untrammeled by annoying legislation, safety to life and limb would be next to absolute. Our railroads are able to take care of passengers ducers therefore resolved to raise the price best, while they are forced to do many

of domestic spelter from 7%c. to 7%c., things for the sake of safety which they know are utterly useless. Of course they mand from brass manufacturers, which will not do any more than is absolutely necessary to come up to the legal requirements. Could we leave the roads free, as the Spanish law seems to, and make safety selves about the means, the railroad officials would not be long in finding out what the best thing to do would be. example, it was not many years ago that a State legislature felt called upon to investigate and legislate upon the subject of trains rolling from high banks and bridges. The legislative committee proposed all sorts of expedients, and called engineers and railway men as witnesses, putting them upon the stand under oath, we as long as a tolerably good demand ex- believe. The engineers said that the plans of the legislative committee were object. It undersold foreign sufficiently to folly; the railway men stated some facts and then held their tongues, while profit to the producer, and while doing so inventors talked about stone walls, balks of timber, sheet iron fenders and the like to their heart's content. Fortunately for once the legislators realized the fact that the subject was too much for them, and dropped the matter. They had found out simply nothing upon the subject in hand -the means of prevention-yet if it had been necessary to have taken precautionary measures almost any of the experts called could have rendered traffic on any road safer at the bridges and embank

> Experience has very clearly shown that honorable empirics in legislature assembled are in no respect competent to prescribe the conditions of railway management. So far as the safety of travel is concerned, the laws they have enacted have been worse than useless. Behind these the corporations-who are not without influence in committee rooms and lobbies-shelter themselves when passengers are killed or injured. They comply with the letter of the statutes, and there their responsibility ceases. The victim of their negligence or carelessness has recourse against them in the courts, but not easy recourse. It has been the policy of our railroads to make it "terrible" to sue them, and only those can try the law's delays with a railroad company who have abundant means, and can afford to employ counsel by the year. Knowing this, few venture the experiment, and when a railroad makes an offer of a compromise its terms are very likely to be accepted, however little relation the amount tendered may bear to the compensation justly due. Were the pecuniary liabilities of our railroad companies fixed by law, and all suits against them for damages tried by the public prosecutor on behalf of the publie-as in any other case of murder or manslaughter-accidents to passenger trains would become so rare that even the most timid traveler might feel as great a sense of security as though he were in bed at home. But the ways and means of safety must not be prescribed, or we should only make a bad matter worse by depriving the unfortunate victim of a railroad of the dubious recourse he now has in common law. Of course, we do not expect that such laws will ever be passed. Some things are possible in poor, distraught, priest ridden, revolutionary Spain, which are not possible in this great, glorious, free enlightened Republic, and legislation of this kind is one of these things. There the government controls the railroads-here, in the majority of the States, the railroads control the government.

Natural Gas.

An experiment of considerable interest was lately made at the gas wells supplying the Pittsburgh mills with gas-or, perhaps it would more correctly express it to say with the transportation of the gas through pipes. The Natural Gas Company, owning the wells and pipe line that have been supplying gas to the mills of Messrs. Spang, Chalfant & Co. and Graff, Bennett & Co., have lately drilled a new well some 2% miles from the old Harvey Well. About the feasibility of conveying the gas from this new well through the same pipe that the gas from the old well was conducted, as well as about the whole subject of the transportation of gas in pipes, there has been a good deal of controversy and many utterances, some wise and some otherwise. It was stoutly claimed that, if one well was weaker than the other, the gas from the stronger would "back up" and prevent any escape from the weaker. It was also asserted with much scientific gravity that the proper way to convey gas was by pipes varying in diameter like a pocket telescope, some asserting that the discharge should be from the small end, and others as earnestly advo-cating the large end. While the result of the action of the Natural Gas Company has not positively settled this fight between the "big enders" and "little enders," it has given data on the subject, and has settled the question of conveying gas from two wells through one pipe.

The distance between the old and new

well is, as stated, some 2% miles. In conveying the gas from the new well to the pipe leading to Pittsburgh from the old pipe leading to Pittsburgh from the old one, the connection was made with the tubing at the well by a 6 inch pipe. This ran for about 400 yards, and a 4 inch pipe was attached for some 2 miles, from which place a 3 inch pipe was used to the connection with the 6 inch main leading to Pittsburgh. The connection was made from the old well with the main by a 2 inch pipe, and the connections being made the gauge at the old well showed 125 lbs. the gauge at the old well showed 125 lbs. to the square inch, and at the new well 150.

The effect on the pressure at the mills in Pittsburgh was very marked. With the old well alone the pressure of gas at Spang, Chalfant & Co.'s mill was 2½ los. With the new well added the pressure rose to 10 lbs. at the mill, and the waste gas blowing off outside of the mill through a 3 inch pipe opened full. With the new well alone the pressure was 5 lbs., and blowing off through the same pipe about half

in other parts of France. When they became German States, and were cut off from the French markets by the duties imposed for the protection of French manufacturers, they began to flood Germany with manufactured goods, and the cry now goes up from the German manufacturing districts that Alsace and Lorraine are ruining the whole empire. In ingenuity, economy, dexterity and enter-prise, as well as in artistic taste, the French manufacturers and artisans are far French manufacturers and artisans are far ahead of those of Germany. In certain lines of manufacturing Alsace and Lordine with one horse. The 10 inch cut markets are limited, and the manufacturers of the mewly acquired States are pushing vigorously to secure a practical monopoly is designed for ladies' use, up to and including a 30 inch cut, with seat and shafts, and intended for use with one horse. The 10 inch cut market set and all Europe, and by incorporating these States Germany has created a home competition which promises to cause an industrial paralysis in many parts of the new Empi. e. In the present depressed condition of trade the demands of the markets are limited, and the manufacturers of the newly acquired States are pushing vigorously to secure a practical monopoly vigorously to secure a practical monopoly of what trade there is. As they can manufacture cheaper and better goods than can be made elsewhere in Germany, they have but little trouble in securing orders in competition with the German manufacturers in their own markets. The result is, as we have said, a bitter complaint of overproduction, depreciation in values, loss of interest on capital invested in manufactures and insufficient employment for labor. There is something of retributive justice in this, which should satisfy France for the loss of territory, even though it brings but poor consolation. satisfy France for the loss of territory, even though it brings but poor consolation to the people forced by the strong hand of military power to change their nationality as reparation for the sins of a weak and foolish monarch. Germany already has cause to repent the territorial acquisition which gave her so much satisfaction when gained. It is possible to make a German citizen out of a Frenchman, but he does not thereby become a German except in name, and in a competition for a common market he will prove more than a match market he will prove more than a match for the less ingenious and skillful Tueton.

The diamond drill seems to have a mission to convert the bonanza gamblers from the errors of their ways. It is stated that the recent heavy decline in "Consolidated Virginia," a decline of over 50 per cent., was due in part. at least, to the revelations of the drill, which has shown the near ex-haustion of the mine. It is stated that Flood & O'Brien have thrown one-third of their stock on the market within the last thirty days, and are rapidly unloading the rest. The employment of the diamond drill will introduce an element of certainty into mine financiering, that will most effectually limit stock gambling in the shares of these mines.

New Publications.

THE AMERICAN IRON TRADE IN 1876, politically, his-Swank, Secretary of the American Iron and Ste Association. Annual report to January 1st, 1876. Mr. Swank's annual reports have become feature of standard value in the statistical literature of the American fron trade. So thoroughly is his work done as Secretary of the Iron and Steel Association, that no one else has a field mower. These machines range in price considered it with while to traverse the same from \$10 to \$20. ground for several years. Consequently, the publications of the Iron and Steel Association are accepted as statistical authority by the press and public at home and abroad. This year Mr. Swank has extended the scope of his labors somewhat, and prints a Centennial re-

port of about 200 pages, which contains a vast amount of carefully collected information, much of which we have been kindly permitted to publish from advanced sheets.

Of the complete volume we can speak but briefly. Like all of Mr. Swank's work, it is done with a care and thoroughness which gives it exceptional value among statistical publications. It has been the labor of many months, and the work of revision ha been almost as exacting in its demands as that of computation. The introductory chapters, on the industrial The same company also exhibit the new policies of Great Britain and the United States, show a great deal of research, and constitute together a strong argument in favor of a policy of protection to home industry. The history of the American iron trade was compiled from all available records, and is probably as thorough as it could be made at this time, and the statistics are happily free from any haphazard estimates and elements of uncertainty which It carries the regular gearing of a roller machine,

are so often found in table work. Mr. Swank and his accomplished assistant, Mr. Cone, are certainly entitled to the thanks of the iron trade for the manner in which their work has been done. We shall have occasion to speak of the report in subsequent issues.

THE SILE INDUSTRY IN AMERICA. A history pre-pared for the Centennial Exposition. By L. P. Brockett, M. D.

This attractive and interesting work is published under the auspices of the Silk Association of America, and is a timely contribution to our Centennial literature. It contains many interesting details of the lives and efforts of the pioneers in silk industry, and of the more recent achievements in the manufacture. There are also presented valuable tables of statistics, in great part new and expressly prepared for off outside of the mill through a 3 inch
pipe opened full. With the new well
alone the pressure was 5 lbs., and blowing
off through the same pipe about half
opened.

What Germany Secured with Alsace
and Lorraine.

Present appearances indicate that the
territory acquired by Germany from
France in the late war, consisting of the
provinces of Alsace and Lorraine, are
likely to prove very troublesome possessions. Previous to the war the production
of these provinces found a market chiefly
in other parts of France. When they bethis work, which show the large mercantile

Hardware, Agricultural Implements, &c. at the Centennial.

Agricultural Hall.

GRAHAM, EMLEN & PASSMORE. Philadelphia, manufacturers of the Philadel phia lawn mowers, make a very fine display of these machines; they show them in all the sizes in which they are made from a 10 inch cut, re wheels. The 12, 14, 16, 18 and 20 inch cut, with 61/4 inch side wheels, and weighing respectively 34, 37, 41, 46 and 50 pounds, are smooth work ing, simple and effective machines. The man ufacturers, in a circular describing these machines, say: "We ask the special attention of ollect that but little over half the strength is required to work one of our side wheel mowers that it takes to operate the old style heavy roller machines, and that, although so light, so few pieces are used in their construction that each piece is much stronger than the similar part of any other kind of lawn mower, so that they will last much longer." Beside the lawn mowers mentioned above, they make without side wheels a 14 and 16 inch cut, a 15 inch cut. with 81/4 inch wheels, and several styles of hor-e machines.

Hamilton, Ohio, exhibits the Novelty lawn 'or grass mower, a light machine, the cutters of which are made on the same principle as is used in mowers and reapers; the power is furnished by the driver, and is derived from a cog wheel arrangement, to which is attached a crank handle, operating a rod which runs along the pushing bar of the machine, and which works the knives backward and forward. The manufacturer of this machine claims for it that it is the only mower that can cut tall grass and do trimming. These lawn mowers are all provided with rollers, and are made in 4 sizes, 14, 16, 18 and 20 inches wide, and weighing respectively 16, 18, 20 and 25 lbs. There is also on exhibition a No. 5 machine on the same principle, which is not included among lawn mowers, and is intended for mowing clover, grain or grass for feed or hay. This machine has 9 inch iron wheels only, and is side draft. It is claimed that it has an advantage over the scythe of letting the grass fall where it grew, saving trouble to scatter for curing; also of doing more work, and is suited for those who have not enough work for the employment of

THE HILLS ARCHIMEDRAN LAWN MOWER COM-PANY. Colt's Armory, Hartford, Conn., make a fine display of their machines. They say of their mowers: "These mowers have become celebrated throughout the world where lawns are cultivated, as being the most durable machine of its kind in use. It contains all the improvemeuts that experience in their manufacture can suggest-are easily operated, have a full roller, poiseless ratchet, and an adjustable iron handle which can be raised or lowered at the convenience of the operator-and will do splendid work on every variety of lawn. They are the lightest roller lawn mower made of their capacity." They are made 10, 12 and 14 inch cut for hand-power, and 28 and 32 inch for horse. 'Charter Oak " lawn mower, which they describe in a circular as follows: "Its peculiar construction combines the good points of both a roller and a wheel machine naking it very durable and light running. It weighs fifteen pounds less than the old style mowers, is very easily operated, and the beauty

and evenness of its work can not be surpassed.

which is beautifully and substantially inclosed within its side frame, a point necessary for durability as well as to prevent clogging of the gears. The machine is mounted on two large driving wheels, or pulleys, and instead of being on the outside of the frames, to run in the uncut grass like all other wheel mowers, they are placed inside the frames back of the cutting blades, running on a shaft, each independent of the other, allowing the machine to be turned either to the right or the left without injury to the sod, and to be turned around in a circle no greater than its own length, and cutting at the same time. It is also provided with a neatly constructed iron handle, which, being adjustable, can be raised or lowered at the convenience of the operator, allowing the machine to adapt itself to the inequalities of the ground without losing power, and at the same time to make an even and level cut. One very important feature is its three-bladed solid revolving cutter, work ing in patent boxes, so constructed that grass cannot wind around the shaft of the cutter, which overcomes a serious objection in most all other lawn mowers. The revolving cutter is provided with steel cutting edges, which an be replaced when necessary, without the expense of buying a new knife." This machine is made in four sizes for handpower, viz.: 10, 13, 15 and 18 inch cut, and two sizes for pony and horse, viz.: 28 and 32 inch cut. They are well made and handsomely finished, and the driving wheels being inside the frames enable the operator to cut the grass clean around walks, flower beds, &c., which is an advantage that cannot fail to commend this machine to practical people. They also exhibit when finished, which cannot be excelled by the sets of floral tools in neat paper boxes containing, trowel, boe, rake and weeding fork. These goods are well finished and are shown in two sizes, retailing at \$1 and \$1.25 per set respec tively.

CHADBORN & COLDWELL MFG. CO.,

Newburgh, N. Y., exhibit a handsome assortment of their celebrated "Excelsior" lawn mowers. These machines are made in eight inch cut respectively; and four for horsepower, of 25, 30, 35 and 40 inch cut respective ly. They claim for the "Excelsior" over other mowers that "it runs lighter; it cuts the borders; it cuts ligher grass; the gears are per feetly covered; it rolls the ground; it needs less repairs; its adjustments are more simple; and the roller do s not run in the standing grass.' These lawn mowers can be seen in operation in Central Park, New York; Boston Common: Government Grounds, Washington; and in many other prominent parks and public grounds in the United States and Canada. Regarding their new "Excelsior" horse lawn mower they say: "In the construction of our new horse lawn mowers only the very best material is used, and the design is such as to combine the greatest possible strength with lightness of draught and perfect working qualities. The gears are perfectly covered, like those of our hand mowers, and, therefore, becoming clogged with grass or dirt is simply impossible. We manufacture four sizes of this new horse also manufacture and exhibit Chadborn's automatic smoked beef cutter, which seems to be a very practical and perfect working machine. and one that will fill a want long felt by almost every grocer, butcher and hotel keeper in the This machine will cut soft beef as well as dry, and it cuts perfectly uniform in thickness, it takes up but little room, and any one that can turn a crank can use it. It is very simple in construction, and not liable to get out of order, as the edge of the knife only touches the meat. When sharpening is needed, it can be done without removing the knife.

THE RHODE ISLAND HORSESHOE CO., Providence, R. I., exhibit on a handsome stand, in the form of a mammoth horseshoe, a large assortment of their specialties, among which we notice their new patterns of Perkins' imconsumer than any other machine-made animal shoe in the market. They have reached their the closest attention paid to the details of and quality. ceiving the nail head, to obtain the proper position and angle of the nall holes and to round the outside edge; and, by our process of thickening the heel, the iron at that point is increased in hardness. These are all points neces sary to produce a perfect shoe, and are well understood and appreciated by the consumer, and are not reached in such perfection by any other h rseshoe machinery. The Po kins' patent animal shoe machinery now owned and operated by us, from the simplicity of its construction and ease of management, can be readily adapted to the manufacture of shoes suited to the wants of any part of the world." This exhibit contains the largest assertment of these goods that we have seen, and for variety

in charge of Mr. Frank Durrie, of New York. S. PUTNAM & CO.,

Neponset, Mass., exhibit their Government Standard hammer pointed horse nails in all the sizes required by the trade and consumers. They say of these goods, which will compare favorably in point of finish with any similar line on the market: "The reputation which the Putnam Nail' has obtained as the 'Government S andard Horseshoe Nail' of the country places it in the highest rank of machinemade nails. The great difficulty heretofore experienced in obtaining brands of iron combining strength, toughness and freedom from flaws, we have overcome by having our iron manufactured expressly for us in Norway, which enables us to offer a nail unsurpassed in the world. After many years of experience, and with new and improved machinery under our own patents, we now offer to from the rolling mill, and placed in the reheatmany patrons and the public a highly finished 'hammer pointed' horse- iron. As soon as this process is completed, shoe nail ready for use, which we warrant to be the bar of iron is passed into the machine of uniform character in all respects, and design- through two reliers, which act as autoed to maintain the reputation we have so long matic feeders, the rollers being kept in conheld among the horseshoers of the country, stant pressure on the bar by an attach-These nails are made separately, the iron when nearly at a welding heat being drawn out under hammers, by which means it is made firmer, necessary length of iron to make one horseshoe. process. In our process of pointing these nails tongue catches the piece cut off and carries it

-four for hand-power, of 9, 12, 15 and 18 Forge Village, Mass., exhibit Eureka ham-

to \$1000 each. These are of rosewood, nickelplate and bronze, and of great beauty. They are richly carved and ornamented, the device being appropriately emblematic of agriculture, fruits, grains, &c., and are admired by the or dinary visitor for their artistic and graceful appearance, as well as commended for their supefor qualities by those whose avocations enable them to express an intelligent opinion. The mower, enabling us to supply the want those having small lawns, as well as those having small lawns, as well as those having more extensive ones. We confidently that will do all the plowing on a farm well and easily." By a system of changeable shares, it easily." By a system of changeable shares, it heavy clay, stony lands, dry, baked soils, &c. and with the improved "marsh share," marshes, wet prairies, willow roots, bazel roots, &c., can be plowed with ease. Every piece is supplied in exact duplicates, fitted by machinery, and can be replaced by the man using it. The "General Purpose" and "Junior" (or sod) plows, can be changed from one to the other by changing mold-boards, and every dealer selling the plows is obligated to keep on hand a full supply of shares and other repairs. An important discovery by Mr. Oliver is the material known as Oliver's chilled metal, the hardest substance in use that is adapted to plow making. It is so dense and compact in grain that it will receive and retain almost as high a polish as a mirror. An ordinary drill, file, or cutting instrument make no proved horseshoes in nine different sizes, both more impression on it than on glass, and it is light, medium and heavy, from No. 0 to No. 8 impossible to raise a wiry edge on it, nor will inclusive; Perkins' pattern mule shoes; Per- rust eat into it. It is of uniform hardness all kins' pattern snow or mud shoes; Rhode Island over. The tempering and forming being done pattern horseshoes, and Perkins' pattern trot- at the same operation, there is no danger of ting shoes. In a circular regarding these goods soft -pots. Mold boards of this material wear the company say : "We claim that the horse much longer than steel, while its scouring and mule shoes manufactured by us are more qualities improve with use. In its plan of con durable, easier to adjust and cheaper for the struction it differs widely from the ordinary plow. The beam is placed in the middle of the work, giving the plow a center draft. By the present high state of excellence by having had use of slots at the heel and in the head of the post the beam can be moved its whole length manufacture and by the use of a selected stock, to either side, so as to retain this center draft which produces a tough, hard and fibrous iron. under all circumstances, balancing the plow so By the completeness of our machinery we are that it will run without being held, and relievenabled during the process of manufacture to ing team and plowman from working the plow improve the quality of the iron by hammering on a twist. The adjusting is done at the heel it by a succession of quick, sharp and drawing of the beam, and is so simple and complete blows, and to give to the shoes a uniform hape that the plow is always under full control of We are also enabled to crease or the plowman. Another advantage of this plan fuller the shoe in the best proportion for re- is the non-choking qualities imparted to the plow. The beam and standard being placed inside the line on which the growth raises over the top of the share, allow it to pass by on the land side, and drag off on the edge of the furrow, hence the plow works easily where an ordinary plow could not be used at all. Another important point is the device by which the whole face of the cutter, share and mold are made to present a uniform and continuous surface to the soil, leaving no opening behind the cutter, causing a uniform friction over every meh of the share and mold, leaving no spot or angle on which the soil can lodge and clog the plow or add to its draft : cutting and turning on the same curve, thus relieving the plow quickly from the weight of the soil, adding inand completeness it will compare favorably creased strength to the share by giving it twice with any similar line of goods on ex .ibition. the usual length of bearing, and putting more It is located at B. 23, Agricultural Hall, and is metal into the nose, where it is needed. This changed

simple device, aided by the hardness of Oliver's chilled metal, imparts to the plow two of its most valuable properties, viz., lightness of draft (which means saving of horse flesh, feed, time and money), and superior scouring quali-

Machinery Hall.

H. BURDEN & SONS, TROY, N. Y.

In Machinery Hall, Section B. 3, Column 23, may be seen a beautiful model of Burden's patent for making horseshoes by machinery. Their exhibit of horseshoes, however, is in Agricultural Hall. The machine is not a very complicated one, but, on the contrary, ita leading features are easily understood. two things which first strike the eve in connection with the machine are some wheels, and a long reheating furnace adjoining them. Bars of iron 40 feet in length are brought hot ing furnace for the purpose of annealing the ment to the cutting lever, which, worktougher and more compact than by any other At the moment of cutting off, the bending process. In our process of pointing these nails to superfluous metal is removed by cutting or clipping, thus exposing the fibers or grains of the iron, and rendering them liable to split or sliver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the hoof, but a most liver when driven into the first die, which gives the form and shapt or the shoe. It then passes on to another roll and shaft, called the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing shaft, on which is a die to which the creasing of the shoe is produced, while at the same time the holes for the nails and picture. He holes for the nails and picture when finished, what any shoe of any shape, size or pattern end by creating the when finished, and by the local blacksmith before being used. One great advantage of this machine is, how complete, and has only to be heated and fived by the local blacksmith before being used. One great advantage of this machine is, and pattern labilities."

NATIONAL HORSE NAIL CO.,

Vergennes, Vt., show an assortment of political pattern sent. It is accomplate in this way:

A. H. CARTLE & SON,

Forge Village, Mass., exblbit Eureka hammer of the shoe is produced, while at the same time the machine, pattern sent. It is accomplated in this way:

A. no superfluous metal is removed by cutting or into the first die, which gives the form and but we are informed that the firm are putting in new plant which will double their capacity of production, and will shortly have another storehouse complete, doubline their storage capacity. The machine ordinarily turns out 60 to 70 shoes per minute, and can turn out as many as 100 per minute. The late Henry Burden was the inventor of this machine, as also, we are informed, of the "Burden squeezer," through which all the iron made into two-thirds of the rails laid down in Great Britain passed for many years. Mr. B. also built the first clear boat, and in 1850 organized in Glasgow, the famous Atlantic ferry, for building and running a line of steamers to this country. of greater length in proportion to beam, and of of greater length in proportion to beam, and of of greater length in proportion to beam, and of greater tonnage than any then in vogue. His designs were, in fact, almost the counterpart of those now used in the construction of such vessels as the White Star Steamship Company run so successfully. As an evidence of the appreciation in which Mr. Burden's inventions are held, we may say that very recently the Royal Historical Society, of Great Britain, applied to Mr. Burden's family for all the information they could furnish with regard to his connection with steamship building, and his many valuable inventions, for the purpose of making valuable inventions, for the purpose of making due record of them for the benefit of the whole British nation.

Main Ruilding.

SWEDISH DEPARTMENT.

The exhibits of hardware, cutlery, edge tools and saws in the Swedish department are, with scarcely an exception, examples, as far as America is concerned, of a bygone age. In locks of sill the varieties shown, and we noticed padlocks, cabinet locks, mortise and rim locks, the styles are heavy, and the finish will contrast very unfavorably with the goods required in our markets. In padlocks some of the goods are so common that even their cheapness, which is brought to the notice of the visitor, would not help our imagination to find a place forthem. A good assortment of files is shown, but these possess no special feature that we could discern. We also noticed assortments of edge tools, such as chisels, plane irons, and kindred goods which were, with few exceptions, heavier proportioned than those in use in our markets. A few cases of well finished SWEDISH DEPARTMENT. in our markets. A few cases of well finished razors are exhibited, and a fair line of plumbers' property for the property of t oods of this class on exhibition. Among the aws exhibited are billet webs, mill, cro circular saws, hand, panel and rip

A. G. NEWMAN.

No. 1172 Broadway, New York, exhibits Buckman's patent torsion spring door butts and door springs on two very handsomely mounted doors. These butts are supplied both single and double acting. The manufacturer says of these goods: "The superiority of the Torsion over any form of apiral spring, is universally acknowledge!. Our application of the spring is indorsed by the approval of architects and builders. The spring, which is protected by the connecting rods, acts directly upon the butts, producing a prompt and effective action, which is completely under control, and can be increased or diminished at pleasure. It is simple, durable, easily applied, well protected from accidents, and when damaged easily and cheaply repaired." On many of the finest buildings in New York these goods have been applied, and we believe they have in all cases proved entirely satisfactory. Mr. Newman also exhibits an improved electrical elevator enunciator, which only requires one wire for any number of floors. It not only exposes the number on the indicator, but it strikes it also on a bell so as to be of equal service after dark in elevators where a lamp is not used. Beside the foregoing, he also shows a patent French flat indicator, having in combination with bell pull a speaking No. 1172 Broadway, New York, exhibits Bucka lamp is not used. Beside the foregoing, he also shows a patent French flat indicator, having in combination with bell pull a speaking tube, letter box with lock and key, and name plate so arranged that the name can be readily

Iron and Steel Workers.

Pursuant to call, the United Sons of Vulcan, the Associated Brotherhood of Iron and Steel Heaters, and the Rollers, Roughers and Roll diately after the legalization of a strike. Hands' Association met in Pittsburgh on the 2d of August for the purpose of forming an the proceedings.

and discussed the proposed plan of organiza- merged into one. tion. We have already given this somewhat in detail, and we need not enter into that part of the Sons of Vulcan will give a good idea of the scope of the new union:

of the Sons of Vulcan will give a good idea of the scope of the new union:

To the Officers and Members of the National Convention.—We, your committee, respectfully submit the following as our views of smalgamation: We are of the opinion that the smalgamation of the different organizations is the only means by which we can command that respect and the recognition of our just rights and privileges, and that this is the only means left us by which we can protect ourselves, individually and collectively, keeping in view that our interests are identical. Adopted.

On motion, that we organize under one executive head, and that the different lodges in each locality meet separately.

Amended.—That we meet in a body. Original motion carried.

On motion, that when the number of members be 50, or less, they shall be entitled to one representative, and for each additional 100 members, or any part, one representative.

Adopted.

Adopted.

On motion, that the members of the Amalgamated Society shall meet in one body once a quarter. Adopted.

On motion, that in localities where the number of members are not sufficient to support two lodges, they be allowed to meet in one body. Adopted.

On motion, that we recommend the constitution and by-laws drafte | by the Amalgamated Committee be adopted, subject to amendment. Adopted.

As a matter of considerable importance, we give the discussion on the admittance of puddlers' belpers into the union, as reported by the Labor Tribune. The question was on the adoption of the following article of the con-

stitution:

ARTICLE I—Sec. I.—This Association shall be known as the National Amalgamated Association of the Iron and Steet workers of the United States, consisting of puddlers, boilers, heaters, roll hands, pullors, helpers and shinglers. On this first section one hour was spent in debate, the question being on the admission of boilers' helpers. Adopted as read.

Bro. Flute, of Bayview, thought the interests of the association required that the helpers should be included—unless certain restrictions were made for the benefit and protection of all.

all.

Bro. McAninch, who presented the resolutions for the admission of the helpers, suggested that there should be three degrees in the organization, in which helpers could be first degree members, and retire after first degree business was transacted; level-handed men could be second degree members, while mem having furnaces should be third degree members.

Bro. Stewart, of Pittsburgh, stated that the success of the organization would be endan-gered in a strike unless they were in. The ex-perience of recent strikes showed that it was possible for helpers to take the place of boil-

possible for helpers to take the place of boilers.

Bro. Thos. Marlow, of Pittsburgh, said that in England experience had demonstrated that the presence of helpers gave the union more control over them than if they were out.

Bro. Walter McCabe felt that helpers would add strength to the organization. He said that instead of helpers injuring the organization in a strike they would help it.

President Bishop, on the floor, stated that the heaters and rollers and the iron and steel roll hands would send communications to this body concerning their numerical strength, which would throw some light on the question under discussion.

Chairman Grundy asked what kind of helpers were meant in the report of the Committee on Amalgamation.

instructions to our committee to the Amalgamated Convention, and that our present constitution is not to be their instructions.

D. E. Jones, deputy of the Sixth District, stated that he was instructed to vote against the introduction of helpers.

Bro. Stewart stated that unworthy or unskilled helpers could be kent out by helled and

skilled helpers could be kept out by ballot, and

skilled helpers could be kept out by ballot, and good ones could be taken in.

Bro. McCullough, of Niles, was instructed to vote in favor of the admission of helpers.
Chairman Gruudy stated, boilers make a habit of learning 150 "flittle helpers" per year, who stir the bars or melt the beat, thus filling the labor market, while we are making laws to keep out helpers.
An amendment to strike out the word "helper" and insert "sbingler" was adopted.
Bro. McCabe called the previous question, and a vote was taken adopting the name of The Amalyamated Union, as recommended by the committee.

the committee.

In the joint convention the first business being the election of permanent officers, James Grundy was nominated chairman and elected. Wm. Martin, secretary of the Roll Hands' Union, was elected permanent secretary. The committee who were appointed on amalgamation. presented majority and minority reports. The majority had reported in favor of arbitration, and also in favor of levving a special quarterly tax upon the membership of each sub lodge, said tax, when collected, to be forwarded to the treasurer of the National Association, and by him held separate, to be used only in support of strikes legalized by the Association. minority had reported against the policy of arbitration, in favor of a special strike tax, but and Russia as ranking fifth as to the area of her l

The Convention of the Amalgamated opposed its transmission to the national treasurer; on the contrary, they provide that the strike fund shall be kept separate from all others, in the hands of each sub-lodge, and be forwarded by them to the proper officials when legally called upon by the proper officers imme-

The reports gave rise to a long and animated discussion, in which the strongest men of the amalgamated association of all iron and steel Convention participated. Finally, a vote was workers. During the sessions a representative taken which resulted in the adoption of the of the Nailers' was admitted to participate in minority report, when it was announced by the chair that amalgamation had been consum-The different bodies met separately at first mated, and that both associations were now

Another committee presented a report in favor of the eight districts as heretofore estabof the subject at length. The following action lished by the Sons of Vulcan, excepting that Ashland, Ky., be transferred from the third to the second district, and that each district shall be entitled to select one vice-president, who shall have charge of the same, with authority to appoint one or more deputies, who shall report to the vice-presidents in charge regularly every three months. The report was adopted, and the convention proceeded to the election of vice-presidents, with the following result

First district, James Penny, Pittsburgh second district, David Reese, Wheeling, W. Va.; third district, William Morris, Indianapolis; fourth district, John A. Hute, Bay View, Wis.; sixth district, John Jarrett, Wheatland, Pa.; eighth district, John Morris, Philadel-

It was unanimously agreed that the president should appoint vice-presidents for the fifth and seventh districts at his convenience. following additional officers were then elected: Secretary and treasurer, Edward McGinniss, Youngstown, O.; trustees, Messrs. Marrin and Plant, Columbus, O., and Jarrett, Wheatland,

The next session will be held in Columbus on the first Tuesday in August, 1877.

Mining and Metallurgy at the International Exhibition.

NO. VI

INDIA. The recent appendix to the title of Queen Victoria assumes additional importance by an inspection of the Indian exhibit in the International Exhibition, which, together with repre sentations of the various industries and arts, in cludes a display of minerals and ores which amply repay examination.

The finest specimens of iron ores come from the southern portion of the Indian peninsular, bounded by the Coromandel and Malabar coasts, known as the Medras Presidency. They include magnetites, some sand closely resembling the Moisic sand described as forming a part of the Canadian exhibit, and a variety of hematites and chromic ores. One of the most valuable deposits in this Presidency is near Salem, where beds of magnetic ore from 50 to 100 feet thick are traceable for miles. One bill has encircling it five distinct beds from 20 to 50 feet in thickness.

From the Bengal Presidency, which is by far the largest division of India, occupying the heart of the peninsular, and extending upon both sides of the Bay of Bengal, there are magnetic ores, magnetic iron sands, hematites and bog iron ores. An analysis of a magnetite, of which it is claimed there are nearly half a million tons visible in one locality, gives 69 per cent. of metallic fron, 12-1000ths of 1 per cent. of sulphur, and 5-1000ths of 1 per cent. of phosphorus, A remarkably white clay iron ore is a pecu-

under discussion.

Chairman Grundy asked what kind of helpers were meant in the report of the Committee on Amalgamation.

President Bishop replied that the heaters and rollers allow helpers in, also in rail mills "bug gymen" are in. The spirit of the proposed amalgamation required that our helpers should come in as well as the helpers of other classes of skilled labor. Facts showed that we needed to be on fraternal relations with helpers, and that the boilers' organization should observe and act upon the underlying principle of the proposed organization.

Is it strictly consistent for us to go into a union with helpers of other branches of skilled labor, and yet keep our own out? If he objected to one class of helpers he would debar ail, in justice to himself. He did not argue against debarring helpers, but only as to the right and consistency.

Bro. Gill asked if we admit helpers do we not conflict with our constitution?

Chairman Grundy replied, we are now giving instructions to our committee to the Amalgamated Couventior, and that our present constitution is not to be their instructions.

D. E. Jones, deputy of the Sixth District, stated that he was instructed to vote against the mirrals from Bengal. Iron in the Bombay Presidency is represented only by a couple of samples of hematites. The copper liarity.

Iron buttons and bars made by the native

cluded in the minerals from Bengal. Iron in the Bombay Presidency is represented only by a couple of samples of hematites. The copper ores of India do not appear remarkable; some ordinary ores, principally carbonates, glance and malachite embrace the display. The lead ores are evidently more valuable, some of them containing over 60 por cent. of lead, with sliver, copper, arsenic and antimony in various localities. Antimony must occur in abundance on the Chandra River, where it is claimed there is an extensive bed 20 feet thick of stibulic, which, if as good as the sample.

abundance on the Chandra River, where it is claimed there is an extensive bed 20 feet thick of stibuite, which, if as good as the sample, will some time be a bonanza for the owners. The control of tin mines seems to be strangely alloted in large proportion to Great Britain and her dependencies; we were not, therefore, surprised to see specimens of this ore exhibited in the Indian collection. The principal deposits appear to be in the Tenasserim provinces, on the eastern coast of the Bay of Benral, although the ore is reported as found in several localities on the main peninsula. From the same neighborhood the "barital" or arseulc largely used in India is exhibited by handsome samples of yellow orpiment by the side of pink crude arsenic from Madras. Graphite, native sulphur and corundum—most of the latter from near Salem, in Madras—are shown with the other minerals. There are also some specifrens of gold sand, but no comprehensive or notable display. The occurrence and working of alluvial and quartz gold is noticed in India, but the quantity is not great, and analyses of ores do not give promise of more than six or seven dollars a ton.

India lays claim to having 35,000 square miles of coal fields, and desires to take her place after the United States, China, Australia and Russia as ranking fifth as to the area of her

coal lands. The coal exhibited is of inferior quality; one specimen containing 45 per cent. of fixed carbon, with the same amount of volatile matter, and ten per cent. of ash. It is very seldom that a less percentage of ash exists, and in many instances it reaches 30 per cent. Among the limestones there is one called "kunkur," of which there is abundance. It is ordinarily concreted about fragments of wood, shells, etc., and averages, carbonate of calcium, 72 per cent.; slijca, 15 per cent.; clay, 11 per cent. A saline eflervescence known as "reh," which seriously affects the fertility of the soil, is often noticed where the "kunkur" is found. It is composed of the sulphate and chloride of sodium, and is used to a considerable extent in the manufacture of alum. Among other features of the Indian collection are steatife, gypsum, mica, petroleum, rock salt, niter, and a varied collection of clays and earths. These latter embrace fire-clay, pottery clay, porcelain clay, china clay, pipe clay; coal lands. The coal exhibited is of inferior earths. These latter embrace fire-clay, pottery clay, porcelain clay, china clay, pipe clay; white, pink, yellow and red earths, red and yellow ochres, &c., and are evidently of more than average quality, the colors and homogeneity of some of them being exceptionally good.

geneity of some of them being exceptionally good.

A superior relief map of the Empire is of material service in studying the localities of the various minerals exhibited, but the scale is too small to obtain anything like definite information, for in this map, which is less than 2 feet square, is included the Empire of India, with an area of over 1,500,000 square miles. A series of maps filiustrating the surveys of India unfortunately are folded and locked in the cases. Information respecting this interesting country, whose civilization and industries can be traced for centuries, will be welcome to many of us who, in watching the rapid strides made by our own land, have been too unmindful of the people, resources and physical features of other nations. With its natural wealth and dense population (more than five times the number of inhabitants in the United States reside there upon an area of less than half as great as ours), there should be an industrial future before this land of the Hindoo. Indicative of the march of improvement, there are at present 6500 miles of railroads in Iedia, which is in excess of the length of lines in operation in either Canada or Australasia. The knowledge that the area of India is 13 per cent. of the territory over which the British flag floats, and that it is inhabited by 86 per cent. of of the territory over which the British flag floats, and that it is inhabited by 86 per cent, of those who entirely or partially bear allegiance to "the Crown," gives to the title of "Empress of India" a deep significance.

Special Notices.

SECOND-HAND MACHINERY.

AT EXTREMELY LOW PRICES.

One 2000 lbs. Ferris & Miles Steam Hammer; one 100 lbs. Ferris & Miles Steam Hammer; one Reverberatory Furnace, with Holler attached, connected with 2000 lbs. Hawmer. Eight small Heating Farnaces for anthractic coal. Twelver round open Mearth Forces (wrought iron). Eleven wrought iron Anvils, each weighing 200 lbs. and over. One Oliver with two Hammers. One Bement 4-inch Bolt Cutter. Two 2-spindle Bolt Cutters, cuts % in. to 1½ in. bolts One Die Dressing Machine. Two Double Nut Tauping Machines. One Rotary Nut Tapping Machine, 9 spindles. One single-spindle clutch Bolt Cutter, cuts % in. to ½ in. bolts. One Punching Machine, punches ½ in. bolt houter, cuts % in. to 1½ in. Dolts. One Punching Machine, punches 1i. hole through 1:n. iron. One Punching Machine, punches 1i. hole through 1:n. iron. One Punching Machine, punches ½ in. hole through 3:16 in. hole through ½ in. iron. One Pinte Shears, receives blades 36 in. long, and will shear ½ in. tron. One Alligator Shear, cuts to ½ in. rods. Two Konary Planers. One Channel Bar Drilling Machine, bed 48 ft. long, with 2 heads. One Hardaway Bolt Heading Machine, heads % in. to ½ in. bolts. One Bolt Heading Machine, heads % in. to ¼ in. bolts. One But Heading Machine, heads % in. to ¼ in. bolts. One RUACHE.

GEORGE PLACE, 121 Chambers & 103 Reade Streets, N. Y.

NOTICE.

Water Filters. BATTERSEA, LONDON, July 1, 1876.

We beg to advise the trade and public that we have a, pointed Mr. H. R. Mensins, 62 Water St., N. Y., sole agent for the sale of our well known Silicated Carbon Water Filters. SILICATED CARBON FILTER COMPANY.

SPECIAL NOTICE.

Having established ourselves in business in this ity for the sale of

AMERICAN HARDWARE, HOUSE FURNISHING GOODS, AGRICUL-TURAL IMPLEMENTS, Etc.,

we beg to solicit correspondence with parties desir-ous of being represented by us in Germany and sur-rounding countries. HAMMACHER & DELIUS.

Hambuig, Germany, April, 1876. ouse in N. Y., A. Hammacher & Co., 209 Bowery

SPECIAL NOTICE

MEN'S SINGLE GUNS on to the former line of A. Simon's, Liego

SILESIAN SHEET ZINC.

LOUIS WINDMULLER & ROELKER, 20 Reade Street, N. Y.

TO INVENTORS AND MANUFACTURERS

The 45th Exhibition of the American Institute will open Sentember 5th; Marbitory will be received after August 48th, other goods after August 5th, hereased awards and a Special field Weda for this year. For particulars, blacks, etc. address. "General Super intendent American Lastitutes, New York,"

Specialties of Wrought, Cast, or Sheet Iron or Brass. Made to order in a SUPERIOR MANNER, AT LOW PRICES, by the

CORRUGA ED METAL CO East Berlin, Conn DISCOUNT SCREW LIST.

Dayton & Lamberson. 97 Chambers St., N. Y.

Offi e of Pope, Williams & Co., CHATEAUGAY LAKE, May 1st, 1876. We have placed the exclusive sale of on CHATEAUGAY STEEL IRON

in the hands of Messrs. Naylor & Co., 99 John St. New York; 208 South 4th St., Philadelphia; 6 Oliver St., Boston, who will hereafter act as our agents, and to whom all orders should be addressed. Yours, truly, POPE, WILLIAMS & CO.

SITUATION WANTED by an experienced Hardware man and first-class Salesman, wholesale Hardware man and first-class Salesman, wholesale or retail. Can take charge of business. Salary rea-conable. No objection to country. Good references Address, HARDWARE, Box 213, Appleton, Wis

Special Notices.

ROOFS.

Save time and money by sending for estimate for new or old buildings. Send for our 100 page Book (free if you write to-day), and learn how to stop leaks effectually and cheaply, save re-shingling, etc. Correspondence invited. S Cedar St., N. Y., or 49 S. Front St., Phila. Mention The Iron Age.

JUST ISSUED.

EVERYTHING Seeds, Implements, Machinery, and Fertilizers. New Catalogue, 400 II lustrations, mailed on receipt 10 cent stamp.

FARM.

A. B. COHU, 197 WATER ST., N. Y

Important to Manufacturers. BISSELL, WELLES & MILLET,

nctioneers and Commission Merchants, No. 15 Marray St., New York, 15 Murray 51., New York,
Solicit from Manufacturers and others consignments of Hardware and Cutiery for our weekly
Auction Sales to the Trade, or at private sale for
cash, as desired. Our facilities for moving large lines
of goods are unsurpassed. Advances made if desired.

MANUFACTURING BY CONTRACT.

Our facilities are unusually extensive and complete for manufacturing small articles in

Special Hardware, Tools & Machinery. Are prepared to fill orders promptly and at low prices. Our reference is our work.

THE HULL & BELDEN CO.,

Danbury, Conn

WANTED.—A first-class business man famil-lar with machinery and manufacturing, caps-ble of handling large bodies of men, desires a respon-sible position. References satisfactory. Address, IRON AND STEEL.

Care of P. O. Bex 813, Bridgeport, Conn HALL & HARBESON,

Chemical & Physical Instruments, 191 Greenwich Street, N. Y.

SPECIALTY.—BUNSEN'S GAS BUNNERS, for all heating purposes; BUNSEN'S IMPROVED GAS COMBUSTING FURNACES, with 10, 15 and 25 burners. Fine Brass and Metal Work made to order for Metallurgists, Chemists, Experimenters, Colleges, &c.

TO LET. A Light, Handsome Office.

Possession Immediately. HERMANN BOKER & CO., 101 Duane Street. N. Y.

MANUFACTURERS

iesirous of introducing their goods to the British and Continental Markets, are advised to insert advertisements in the newspaper "IRON," pub lished every Saturday, at 99 Cannon Street,

SCALE: First 3 lines, 3/; every additional line, 10d Price, 6d. per Copy, or 30/ per annum, inclusive of ostage to the United States

Steel Castings.

Solid and Homogeneous. Guaranteed tensile strength, 25 tons to square inch. An invaluable substitute for ex-pensive forgings, or for Cast Iron requiring great strength. Send for circular and price list to CHESTER STEEL CASTINGS CO.,

Evelina St., Philadelphia, Pa

ATTENTION is invited to the fact that the Labels used on my Goods, were entered according to Act of Congress in the year 1876, in the U. S. Patent Office.

IN ADDITION to Auger Bits, I make ston Lip, Car, Machine, Dowel and Hand Rail Bits, also of Boring Machine, Carpenters' and Millwrights Augers. All my goods are solid CAST STEEL, and perfectly made by means of my Patent Machinery.

SPECIAL NOTICE.

I have three patents for Dies, Machiner, and Tools for making Augers and Bits, each running seventeen years; dated as follows: Dec. 19, 1885; January 31, 1866, and July 3, 1866. There is a special cloim on each of the Dies. All persons infringing on said patents will be held responsible to the extent of the law. Russeli Jennings.

DEET RIVER, CONN., Sept. 7, 1874.

Wanted-A Partner.

In a foundry and machine business, already well es tablished. Locality splendid and healthy. A practical man with means is wanted to join a practical man who is already well establis CAR WHEEL FOUNDRY, Address P. O Rox 134, Selma, Alaba

Briesen's Patent Agency FOR SECURING INVENTIONS, TRADE

MARKS, &c., IN AMERICA AND EUROPE.

No. 258 Broadway, New York. A. V. BRIESEN.

VENTILATING & STEAM HEATING. A thoroughly competent engineer, with extensive experience in the above line, desires employment.

Address M.,
Office of The Iron Age, 10 Warren St., N. Y.

EXPORT TO RUSSIA!

Having established ourselves in this city for the sale of American Machinery, Hardwarr, Agricultural implements and Technical Products generally, we beg to solicit correspondence with manufacturers destrous of being represented in Russia. Familiar with the want- of the country, and, as civil engineers, brought in contact with the industrial interests, we are enabled to introduce successfully American products to the trade.

HARTOCH BROS., Kasauska 46, St. Petersburg,

Special Notices.

FOREMAN WANTED.

In the machine shop of an Agricultural Works, lo-cated in a flourishing Western city, building from two to three thousand reapers and mowers per year. Must be a thorough mechanic, active, systematic, careful and have a thorough knowledge of the busi-ness. Applications addressed to

Western Agricultural Works, Care of The Iron Age, 10 Warren St., N. Y., accompanied with reference, will receive attention.

Wanted,

A Self-Acting Steam Hammer, of 500 to 600 lbs. Parties having good serond-hand hammers of this description please address

66 A . 9 59

Box 3064, New York City.

NOTICE! POND'S TOOLS.

Theundersigned has assumed the Personal Property, including accounts, finished and unfinished Machinery, good will &c., connected with the manufacture of Machinery (Tools as conducted by Mr. Lucius W. Pond since 1847, and will consinue the said business at the old stand, cor. Union and Exchange Sis., Worcester, Mass., under the name of David W. Pond, Successor to Lucius W. Pond. CARD.—Having assumed the business mentioned above, I solicit Inquiry and Paironage, with guarantee that present standard of Workmanship, and quality of Machinery shall be maintained. A large quantity of Naw AND SECOND-HAND TOOLS, ALL STYLES AND SIZES, For Sale at Low Prices. Send for list of second-hand tools Store at 98 Liberty St., New York, will be discontinued from Feb. 1, 1876, and all sales made from manufactory.

Respectfully, DAVID W. POND.

Respectfully, DAVID W. POND,
Successor to LUCIUS W. POND.

A. PURVES & SON, Corner South & Penn Streets, Phila., Dealers in

Scrap Iron & Metals, Machinery, Tools, Shafting & Pulleys, Steam Engines, Pumps & Hoilers, Copper, Brass, Tin, Babbit Metals, Foundry Facings. Best Quality Iugot Brass.
Cash paid for alkinds of Metals and Tools.

DROP FORGINGS.

The TRENTON VISE & TOOL WORKS, Trenton, N. J., having increased their facilities, are now able to do all kinds of

Iron and Steel Drop Forgings in quantities to order at reasonable rate HERMANN BOKER & CO., Proprietors, 101 & 103 Dunne St., N. Y.

S. B. LOWE,

Chattanooga, Tenn.

Dealer in METALS AND ORES. Special rates of freight to all principal points in the United States and Canadas.

for Sale, &c.

RARE BUSINESS CHANCE.

The best Hardware and Paper Hanging stock in the city of Taunton. Business stand superior to any other, and rent low. Will be Solid at a Bar-guin. Thorough chance for investigation given. Address, Box 3465, Boston Post Office Or A. W. BANGS & CO., Taunton, Mass.

Stock of Hardware at Auction.

The Sheriff will sell at Pablic Anction, on Thursday, 23d inst., the entire stock of E. A. Warkous, at Ogdensburgh, N. Y. This sale will afford an excellent opportunity to anyone desirous of embarking in the business at this growing city, the stock being full and assortment complete. Particulars can be had by application to the Sheriff of St. Lawrence county. Sale positive.

For Sale.

One Corliss Engine, 14 inch cylinder, 48 inch stroke; band wheel 14 feet by 24 inch face; cylinder and valves new, all in perfect order. One very superior Upricht Drill, has feed and back gears. Two Fowler Presses. Nos. 2 and 3. One Index Milling Machine. One new Crank Planer. Two 15 inch Lathes. One Pratt & Whitney do., 13 inch swing, 4 fr. bed.

48 Beckman Street, N. Y.

For Sale!

Owing to the death of the senior partner, the surviving partner is desirous of disposing of that part of the husiness of the firm comprising the Stove and Tin trade. Would dispose of the entire business, including Agricultural Implements, Hardware, Paints, Olls, &c., if destred. Terms easy with good security.

L. PEASE & SON. Hartford, Vermont.

For Sale.

Finest Hardware, Tin and Stove store in Northern Ohio. For the last nine months the owner having had poor health, has concluded to offer for sale his fine Hardware Business, which will inventory \$10.000 to \$12,000, or sell half interest to some live hardware man who can bring satisfactory reference. Address,

"JOHN,"

Office of The Iron Age, 10 Warren St., N. Y. FOR SALE.

An % inch mill train for making Merchant, Band and Hoop Iron. Will be sold cheap. Apply to W. W. JONES. Near the Lehigh Valley Railroad Deput,

Allentown, Pa.

For Sale, 30,000 acres of Iron Ore and Timbered Land, large water powers, furnace and forge producing best quality, at good profit and sale. Accessible to Western and Eastern markets.

271 N. Charles St., Baltimore, Md.



FOR SALE,

at 10c. a copy, Weekly Spanish Review and Prices Current. The undersigned is also a Translator from and into the English, Spanish, French and German. Latest Translations made: for the governments of Germany and Span, Pacific Mail S. S. Co, Walter A. Wood; Morris, Wheeler & Co.; Todd & Rafferty; John T. Dunkin; Fisk & Blatch; R. W. Wilde; Wilson Sewing Machine Co.; J. Hess & Co.; H. Marquardt; M. Echeveria & Co., and Chas. E. Little, New York; Hocking Valley Mig. Co.; W. F. Potts, Son & Co. Phila; Atlantic and Pacific Land Co.; B. E. Flemming, Jersey City; Wilder & Co., Navannah, and the Tanlie Co.; Stroudsburg "Emergy Grinder", Abendroth & Root Mig. Co., to whom he reters.

137 Estimates furnished of translation and setting up of Sannish. German and French Catalogues for the Centennial.

C. KIRCHHOPF,

C. KIRCHHOFF, Metal Reporter of " The Icon Age,"

Box 3091, New York P. O.

Trade Report.

Office of THE IRON AGE, WEDNESDAY EVENING, August 9, 1876. During the past week a moderate activity has developed in Wall street. The discussion in Congress on the silver question, and the agitation of the question of repealing the act fixing the date of resumption, have not appreciably affected securities, as it is not believed that the Senate will concur in any financial measures likely to be passed by the House this session. Money continues very abundant, and call loans are easily secured at 11/4 @ 21/4 per cent. The discount rate on prime business paper is 3 @ 4 per cent.

The gold market has been without important feature. Silver in London is now selling at \$1.11% per ounce, 1900 fine. The following table shows the extreme daily range of gold since our last report :

		E	lighest.	Lov
Thursday			112	1
Friday				1
Saturday				1
Monday			1125	1
Tuesday			111%	1
Wednesday			111%	1
Comonne	nant ha	nda have	boon auto	and 6

firm. There has been but little inquiry for State bonds, which are strong. Railway mortgages are generally strong. We give below the quotations of governments at the close of business to-day.

In the stock market speculative shares have been very irregular, but in the main strong. The principal dealings have been in Lake Shore, Michigan Central, N. J. Central, St. Paul, Rock Island, D., L. & W. and Telegraph. A vigorous effort has been made, with some success, to break the market for anthracite stocks. We give below the price of active shares at the last call.

The bank statements for the past two weeks compare as follows:

Loans \$250,505,000 252,756,300 Inc... \$2,251,300 \$9ecie ... 19,295,200 \$0,136,000 Inc... \$80,800 Legal tend's .59,523,400 \$0,333,300 Inc... \$80,900 Deposits ... \$23,899,100 Circulation, 15,004,200 15,007,600 Inc... \$4,650,700 Inc... \$4,650, The following tables show the foreign trade

movements for the week: IMPORTS.

For the week	ended At	ıg. ə.	
Total for week Prev. reported	1874. \$7,009,676 .246,383,750	1875. \$4,786.292 206,914,541	1876. \$4,489,71: 175,264,18
Maran Sam 4 A	200 000 400	#211 MOO 000	A450 550 00

Among the imports of general merchandise

	Quant.	Value
Brass goods		95
Bronzes		991
Chains and anchors	118	6,020
Cutlery, r	111	27,39
Gas Fixtures	1	190
Guns	27	5,369
Hardware	11	1,59
Iron, plg, tons		6,17
ron tubes	636	1.05
Iron, other, tons	623	27,48
Metal goods		18,26
Nails		1,40
Needles		9,48
Old metal		20
Steel		15,77
		3,659
Spelter	10,000	95,69
rin, boxes	00,000	
Fin, 2164 slabs2		33,396
Wire	96	76
EXPORTS EXCLUSIVE OF 8	PECIE.	
For the week ended Aug. 8:		

Total for week... \$5,351,353 \$5,217,651 \$5,918,086 Prev. reported... \$175,763,020 \$144,277,999 \$154,171,765 Since Jan 1....\$181,114,273 \$153,495,656 \$160,089,851 EXPORTS OF SPECIE.

Total for the week	. \$82,2A2 .2,587,713
Total since Jan. 1, 1876	.8,037,157
Same time in 1874	.2,064,222
Government bonds close as follows:	
Bid.	Asked.
U. S. Currency 6s	126%
U. S. 6s 1881, reg 11936	119%
U. S. 6s. 1881. con	120%
U. S. 5-20 1865, reg	116%
U. S. 5-20 1865, cou	116%
U. S. 5-20 1865, new reg	117%
U. S. 5-20 1865, cou	117%
U. S. 5-20 1867, reg	120
U. S. 5-20 1867, con	119%
U. S. 5-20 1868, reg	121%
U. S. 5-20 1868, con	12134
U. S. 10-40 reg	1163
U. S. 10-40 cou 119	1193
U. S. 5s, 1881, reg117	11736
U. S. 5e, 1881, cou	11736

For the week ended Aug. 5:

GENERAL HARDWARE.

A good deal of improvement in the demand for General Hardware is reported, and some of our city houses are doing a fair business for the season. Prices continue steady, no changes of importance being reported. We have received the following circular:

PROVIDENCE, Aug. 10, 1876.
To the Hardware Trade—Gentlemen: We us To the Mardwore Trade—Gentlemen: We understand that occasional sales of Rivets are made at prices less than our published rates of July 1, 1876, and therefore, instead of advancing our prices to a remunerative point, as we expected after having disposed of our surplus stock, we shall for the present solicit your orders for our regular stock sizes of Rivets upon the following terms:
 Iron Black, Iron Tinned.
 dis. 65 %

 Block and Carriage Rivets.
 .65 %

 Rivets in Bulk
 .50 %

 Terms cash—30 days.
 .50 %

Terms cash—30 days.

To meet the criticisms of those who do not offer corresponding low prices, we would remind you that our large purchases of Iron for making Screws, and extensive employment of machinery, give us advantages which we avail ourselves of, and are responsible for a quality of goods that shall always be satisfactory, and without depending upon any fictitious label to sell our product, can and will give you the grade of Iron best suited for your requirements.

Yours, very respectfully,

AMERICAN SCREW COMPANY.

In Foreign Hardware a slight improvement in demand is reported, and the tone of the

market is firm. The demand for Nails continues light, but prices are firm at previous quotations, viz.: 10d. to 60d., \$3.10 net, with a discount of 10 cents per keg in large lots.

In response to a call addressed to the manufacturers and importers of Hardware, Cutlery, &c., in the city of New York (a copy of which was published in our last issue), and signed by several of the leading houses in the trade, a large number of Hardware merchants assembled in the parlor of the International Hotel, No. 17 Park Row, on Thursday last. The object of the meeting, as set forth in the letter of invitation, was the formation of a trade association to guard against the unnecessary extension of credits, to gain reliable information as to the standing of dealers and to thoroughly examine insolvent estates in which members may have an interest. George Sargent, of Sargent & Co., secretary. After some general discussion it was resolved to appoint a committee of three whose duty it should be to appoint a committee of five for the purpose of reporting permanent organization.

The following circular explains itself: NOTICE.

Since the introduction of our Seymour's Patent Combined Mop and Brush Holders, which have become so popular and widely known, other parties have been offering to the trade articles in mitation, but similar in principle, and directly infringing said patent.

We now desire to call attention to the fact that we have obtained a reissue of the patent of David Edward (which we own), dated July 4, 1871, and numbered 116,574, reissued July 11, 1876, which with the Seymour patent, cover all the valuable features of the latter, and which antedate all other devices of similar nawhich antedate all other devices of similar na-

We hereby give notice that we shall hold all We hereby give notice that we shall hold all parties responsible to us for damages who are engaged either in manufacturing or selling any device that infringes either of the above-named patents; and unless such manufacture or sale is at once discontinued, we shall proceed to enforce our claims in the United States Courts.

New Britain, Conn., and New York, August 1st, 1876.

gust 1st, 1876.

The Frary Cutlery Co., of Bridgeport, Conn., have established an office and sample room at No. 82 Chambers street. This company make a handsome line of Table Knives and Forks, Carvers, Butcher Knives, Steels, &c. Their Wood Handle Table Knives are made with a screw tang and lock-fast bolster. The finish is very neat, and the goods are placed on the market at about the same figures as ordinary scale tang knives.

A. Field & Sons, No. 78 Chambers street agents for the Union Steel Screw Company, Cleveland, Ohio, quote Bessemer Steel Wood Screws discount 521/4 per cent. from American Screw Company's list.

Attention is invited to the notice of a sale of Hardware by the sheriff of St. Lawrence county, New York, to be held at Odgensburgh on the 23d inst., which will be found among Special Notices, on page 16.

The C. W. Maguire Brush Co., Graham & Haines, agents, have issued the following net price list for their Patent Shoe Brushes :

Maguire Patent Shoe Brushes—The Latest and Best. This brush has a patent scraper attachment for cleaning the dirt from the boot or shoe before blacking. Price List,

No. 110\$2.75	No. 145 \$ 5.75
No. 115 3-25	No. 147 6 CO
No. 120 3:50	No. 150 6.25
No. 125 4·00	No. 155 7:00
No. 127 4·25	No. 160 7.50
No. 130 4-25	No. 165 9.50
No. 181 4·50	No. 170 11.00
No. 185 4·50	No. 175 15.50
No. 136 4-25	
No. 149 5.00	No. 180 18.50
NO. 149 5·00	
Blacking To	op or Dauber.
No. 10	No. 30 \$2.50
No. 20 1.50	No. 60 3.75
Dautson with Pater	ot Samonan Astachad
	nt Scraper Attached.
No. 110 \$1.50	
No. 120 3:00	
No. 10	
No. 80 10.50	
With Scrap	er Attached.
No. 110\$6.50	No. 130\$11.00
No. 120 9:50	No. 140 14:00
	Shoe Brushes.
No. 10\$2.25	No. 45 \$5.25
No. 15 2.75	
No. 20 3·00	
No. 25 3.90	No. 55 6 50
No. 27 3-75	No. 60 7'00
No. 30 3°75	No. 65 9 00
No. 31 4'00	
No. 95	
No. 35 4.00 No. 36 4.25	No. 75 15.00
	No. 80 18 00
No. 40 4·50	

BRITISH IRON MARKET.

(Specially reported by cable for The Iron Age.)

WEDNESDAY, Aug. 9, 1876. Scotch Pig.-A fair business was done during the week. The market now is quiet, and quotations are nominally, for makers' Irons, as follows:

There is nothing of interest to report in Manufactured Iron or Rails.

IRON.

American Pig.-The market continues dull as ever, and no sales of any magnitude have transpired during the week. We continue No. 1 Foundry, \$22 @ \$23; No. 2 Foundry, \$30 @ \$21; Gray Forge, \$19 @ \$20.

Scotch Pig.-This branch of the Iron trade eems to be at a standstill; the only sale reported during the week is 100 tons Coltness from ship at a price which has not transpired.

We continue to quote Old Rails at \$21.50 @ \$22.

Scrap .- In the absence of business we quote Wrought Scrap from yard, at unchanged There has been a slight call for some articles, figures, viz., \$29.

METALS.

Copper.-There have been sold during the All grades of Iron are in a weak condition, and week, mostly to consumers, some 300,000 pounds Lake Superior at 191/c. @ 198/c., which is the closing figure. We quote Baltimore, There is little inquiry for any class of these nominally, 19% c. We learn by cable from London that there has been quite an advance from the lowest point a fortnight ago, when rates:
Best Selected had declined to £76, and Chili was appointed chairman, and Charles L. Mead, Bars to £70. The former recovered £2 since, and the latter £3, but half of the improvement has been lest again, Best Selected closing at £77, and Chili Bars at £71. 10/. The latest mail accounts from there remark with respect to a future meeting some feasible plan for a to Chili Bars, that advices from the West Coast show an advance in price, but that the cost laid down in England is not affected thereby, as exchange has fallen still further, being now as low as 34d, to the dollar, for ninety days sight brukers' drafts. Importers had met the market so far, but even if they should hold off for a time, as they talk of doing, it seemed questionable, with the present light demand, whether such action would produce any great effect on the market. Speculation in England appears almost at a Of Hardware, Iron, Steel and Metals into standstill, and altogether they are passing through very depressed times. The next sale of Wallaroo is appointed for September, when about a similar quantity to that sold in June will be offered. The stagnation in general A business in England has now lasted such a long time that the most solid values begin to be af- B fected, among others, that of real estate, thus g prolonging and complicating the crisis. From all this the conclusion is arrived at that matters will remain unsettled on the other side for some | F time longer, and that the course of the F markets over there is likely to be unfavorable to holders, however low metals may now appear, although making allowance for occasional little rebounds like the recent one in Copper. Manufactured I remains inactive at 31c. for Sheathing, and 32c. for Bolts and Braziers; Bronze and Yellow Metal Sheathing, 20%c. @ 21c.; and Yellow Metal Bolts, 26c. @ 28c. Notwithstanding the little stirring, manufacturers at their late meeting determined to make no change in rates.

Tin.-The low figure to which this metal has declined in Holland has unsettled the equanimity of holders in Europe very considerably, and they are but little comforted by the liberal deliveries that have been going on. While speculation in Tin flourished at London, the result of an auction sale in Holland seemed to be of little account, but now that the speculators have lost both the courage and the means, the price at Amsterdam and the policy pursued by the richest commercial corporation extant once more command the attention of the metal trade. Hence the impression which the decline to 431/2 guilders evidently has made on the London market, where Straits Tin has gone off to £72, 10/ since

it took place. In former years there was always a host of capitalists ready to invest in an article like Tin whenever it dropped below its intrinsic value, that of production; but these capitalists are rare nowadays, de spite the abundance of money. It is the natural reaction from a period of exaggerated speculation in everything that was halfway salable, and therefore need not fill us with surprise. Men of means have ceased to rush into an investment merely because it is cheap. With these facts before us we may feel assured that Tin will not improve permanently till we can demonstrate beyond a doubt that consumption has begun to outstrip production. We have been quiet here, transactions being confined to a mere jobbing trade. We quote large lines, in gold: Straits, 16%c. @ 17c.; English Refined, 17%c.; do. common, 16%c., and Banca, 201/c. Tin Plates are quiet but firm at the following rates, gold, per box, ordinary brands, in large lots: Charcoal Bright, \$7.25 @ \$7.50; do. Ternes, \$6.75; Coke Tin, \$6.25@ \$6.371/4, and do. Ternes, \$5.75 @ \$6. England

Lead .- Common Domestic has relapsed into a quiet attitude, but the previous figure of 61/c., gold, is upheld, though but nominally so, nothing transpiring. The fact is that, comparatively speaking, Common Domestic Lead is the dearest article in the metal line at present, and therefore inspires little confidence during these times of utter stagnation. Soft Missouri, as well as all select species of Lead, are, on the contrary, quite cheap, and are looked upon favorably by those dealing in them. Soft Missouri is now worth 7:10c., currency, a moderate figure. Foreign we nominally quote 6 /4c., gold. The decline in England during the four weeks preceding July 24th had been between 5/ and 10/ per ton. The market closed flat when the last mail left. Manufactured continues steady at 8% c. for Bar; 91/4c. for Pipe, and 10c. for Sheet, less the usual discount to the

Spelter and Zinc .- The extreme relucance shown by consumers in the Brass regions in stocking up even to the most trifling extent as long as their manufactures remain inactive. prolongs the sentiment of apathy which for some time past has seized upon the Spelter market, foreign and domestic, among us. Very little transpired in the latter, and that little befrom ship at a price which has not transpired. We quote: Coltness, \$30; Glengarnock, \$28 (@ \$29; and Egilnton, \$27.

Rails.—In the absence of sales we quote as before, \$30 (@ \$42, at mill, for Iron; and Steel, nominally, \$60 (@ \$63, at tidewater.

Old Rails.—Sales of 4000 tons Old Rails at a private price are reported, and in addition to the sale of Old Car Wheels noted last week, a further sale of 200 tons is reported at \$20.

OLD METALS, PAPER STOCK, &c.

We have no percentible improvement to report in the condition of the Old Metal market. but, as a whole, the market is extremely dull. Copper and Lead are in steady demand at unaltered prices. Brass has declined 1c. a pound are selling slowly at drooping prices. The Rag and Paper Stock markets continue unchanged. goods, and there is no strength to prices. We quote the following as the current purchasing Old Metals .- Copper, 15c. @ 16c. per lb.; Yel-

Old Metals.—Copper, 15c. @ 16c. per lb.; Yellow Metal, 10c.; Brass, 9c.; Composition, beavy, 10c. @11c.; Lead, solid, 5½c.; Tea Lead, 5c.; Zinc, 4c.; Pewter, No. 1, 13c.; do., No. 2, 8c. @ 10c.; Speiter, 5½c., Wrought Iron, \$21 per ton; Light do., \$12 per ton; Stoye Plate, \$8 per ton; Machinery, do., \$10 per ton; Burnt Iron, \$6 per ton.

Rays, &c.—Canvas, Linen, 4½c. @ 5½c.; do. Cotton, No. 1, 5½c.; No. 2, 2½c.; White, No. 1, 5c.; No. 2, 4c.; Colored, do., 2c.; Mixed, Wsolen, 2c. @ 3c.; Soft, do., 5c.; Gunny Bagging, 1½c.; Jute Butts, 1½c.; Gunny Bagging, 1½c.; Jute Butts, 1½c.; Chentucky Baje Rope, 4c.; Oakur Jank, No. 1, 4½ @ 5c.; do. No. 2, 3c.; Tarred Shaking, 1c. @ 1½c.; Grass Rope, 2½c. @ 3c.

IMPORTATIONS.

the Port of New York, for the week end-Ana Angust 8, 1876 :

ding August 8, 1876	
Hardware.	Order. Pig. tons, 100 Spiegel, lots, 2
llcock, Laight & West-	Spiegel, lots, 2
wood.	
Cases, 4	Steel.
Brown J. & Co.	Champin H.
Guns, cs., 1	Ferro manganese, cs.,
Guns, cs., 1 Brown Wm.	50
Grindstones, 80	Haigh J. Lloyd, Bundles, 473
Durand J.	Bundles, 473
Boxes, 8	Merrick C. S. & Co.
Friedmann & Lauterjung,	Bundles, 80
Mdse. pkgs., 8	Bars, 2
Fuller Bros.	Cases, 1
Mdsc. pkgs., 6	Moore Henry,
Field Alfred & Co.	Cases, 5
Anvils, 38	Cases, 5 Mitander Nils,
Casks 2	Pieces, 413
Casks, 2 Cases, 11 Chains, cks., 14	Pieces, 413 Naylor & Co.
Chains, cks., 14	Cast tires 19
Harmer Wm. & Co.	Cast tires, 12 Prosser Thos. & Sons,
Packages, 3	Mdse pkgs 18
Laughland & Co	Mdse. pkgs., 18 Robbins C. & Son,
Wine bolls Out olse	Bundles, 228
Laughland & Co. Wire, bdls., 99; cks., 3; crates, 3	Sulphacher Hymana
	Sulzbacher, Hymann, Wolff & Co.
Lau & Garlichs,	Mdae place 90
Gun caps, cs., 4	Mdse. pkgs., 20 Woodford W. O.
Moore Henry,	Coace 18
Files, cks., 6	Cases, 15
Scales, cs., 1 Moore's J. P. Sons,	Order.
Moore e J. P. Sons,	Rods, bdls., 225
Mdse. pkgs., 5	Cases, 16
Gun caps, cs., 1	35-4-7-
Cartridge cases, cs.,	Metals.
3	Cort N. L. & Co.
McKesson & Robbins,	Tin plates, bxs., 1068
Cases, 2	Terne plates, bxs.,
Pesant J. A.	224
Screws, kegs, 27 Wiebusch & Hilger Hwd.	Canadian Bank of Com-
Wiebusch & Hilger Hwd.	merce,
Co.	Tin plates, bxs., 500
Casks, 3	Merchants Bank of Can-
Mdse. pkgs., 6	ada, Tin plates, bxs., 688
Order.	Tin plates, bxs., 688
Casks, 7	Tin, ingots, 278
Per. caps, cs., 8	Tin plates, bxs., 688 Tin, ingots, 278 Naylor & Co. Tin plates, bxs., 1422 Phelps James & Co. Tin plates, bxs., 2894 Plelps, Dodge & Co. Tin plates, bxs., 787 Mdsc pkrs, 1873
Wire rods, coils., 971	Tin plates, bxs., 1422
	Phelps James & Co.
Iron.	Tin plates, bxs., 2894
	Phelps, Dodge & Co.
Brown Bros. & Co.	Tin plates, bxs., 7037
Bars, 3282	Mdse. pkgs., 1871
Fischer & Keller.	Rivera J. de & Co.
Ore, tons, 200 Comez, Rionda & Cc.	Scrap, bbis., 8
Gomez, Rionda & Cc.	Scrap, pcs, 4
Scrap, pcs., 6	Scrap, pcs, 4 Wheeler E. S. & Co.
Scrap, pcs., 6 Heron, Dickson & Co.	Tin plates, bxs., ≥05
Hars 505	Order.
Mitander Nils.	Tin plates, bxs., 3860
Mitander Nils, Bars, 908 Maryel Wm. D.	Terne plates, bxs.,
Marvel Wm. D.	1129
Ore. tons. 1050	Tin, ingots, 577
Ore, tons, 1050 Naylor & Co.	Tin, slabs, 535
Bars, 1440	Spelter, plates, 4477
Article Alley	ponter, places, watt
	•
00	AT.
CO	AL.
The volume of trad	le, although perceptibly
THE ADMINIS OF MINO	e, arenough perceptiony

larger than it was last week, is not by any means satisfactory to dealers, falling, as it does in company Coals, far behind the same week last year. Outsiders are doing quite well, getting a pretty good trade. The advance by the companies has been practically a farce. If a man wants Coal, it is by no means necessary for him to pay the circular rates, unless be must have company Coals. Outside dealers shade the market in all sorts of ways, and if half of the rumors be true, some of the companies are hard at work trying to secure a share in the retail trade, and are cutting under in a ruinous manner. From this it will be seen the worse than it will be seen the worse than it is while the near approach of by cable is about the same. They are booked that the increase in the amount of trade has the Presidential election, with its excitements not in any way been influenced by the increase in the rates. So far the combination has not been able in the least to affect prices, which have varied just as they usually do when there is a large supply and small demand. Trade may be said to have taken its usual course during the season; the quantity has been smaller than usual, but otherwise there seems to be no marked variations from the ordinary course. That some of the companies are in a bad way is indicated by the eagerness with which they struggle for small contracts, and strive to sell Coal, where the agreement does not bind them, at almost any figure. By the terms of the agreement between the companies, we understand that there is no attempt made to regulate the retail trade. This. of course, leads the companies to make special efforts to reach the best of the trade by cutting prices, and by so doing they are cutting their own throats; the retailers, their own customers in many instances, have bought at the higher figures of the circulars, and then find the market destroyed by the companies, who are underselling them. The Bituminous trade Republic Mine, \$7:50. is unchanged. Freights are nominally as a boat to take care of with nothing to do. We quote as follows:

amberland, at G	corge	LOY	N K	١,			0			₩3	21	30	\$3,49
est Virginia, at	Balti	une	or	θ,		0				 - 4	51)	20	6.00
ittaning f. o. b.,	Balt	me	3C	Θ,				 ۰		 4	25	2	4.35
ewburg Orrel, at		6.6		,	٠,			 i	×			0	4:50
espard, at Baltin	nore.							 				4.0	4.50
road Top, at Son	th Ar	mb	03	۲.,							00	42	4.75
orrisdale, Wigte	ons											60	4.75
unard												63	4.75
" at Philade	phia.											a	8.90
								•				-	0 00

Consolidation Coal Co. f. o. b., George Consolidation Coal Co. f. o. b., Baltimore. In barges at New York. Maryland Coal Co. f. o. b., Baltimore Maryland Coal Co. f. o. b., Georgetow PRICES FOR AUGUST.

PENNSTLVANIA COAL CO., at Weehawken, N. J.

DELAWARE AND HUDSON CANAL CO., at Weehaw-ken, N. J. Lackawanna..... 4.90 5.00 5.10 5.20 5.80 5.10

LEHIGH AND WILKES-BARRE COAL CO., f.o.b. at Port
Johnson, N. J.
Old Company's Summit. 15-40 ... 15-20-5-80-5-10-5-20
Honey-Brook Lehigh ... 5-40 ... 15-20-5-80-5-10-5-20
Wilkes-Barre ... 4-90-5-00-5-10-5-90-5-90
Plymouth Red Ash ... 15-10-5-90-5-10-5-30

PHILADELPHIA AND READING COAL AND IRON CO., at Port Richmond, Philadelphia. Deliverable at the Williamsburgh Yard.

DELAWARE, LACKAWANNA AND WESTERN, at Hobo-ken, N. J. erantou 4 90 5 00 5 10 5 20 5 80 5 10 FREIGHTS-PER TON OF 2240 LBS.

,	Ровтя.	From Elizabethport, Port Johnson, South Amboy, Hoboken & Weehawk'n.	From Philadelphia.	From Baltimore.	From Georgetown.
	Augusta, Me				
٦	Albany			\$1.75	
١,	Bangor, Me	\$1:00	****	2.00	****
	Bath, Me	1.00		1.20	\$1.20
	Baltimore		1:30	1:12	****
	Boston, Mass	.70	95†	1.45	1.60
	Bristol, R. I.	-85		1.10	1 40
	Bridgeport, Ct Bristol, R. I. Cambridgep't, Mass.	1.00			
	Derby			1.40	1.50
	East Cambridge	*1.00	****	1.40	1.30
	Fall River	.80	1.25	1.40	1.40
8	Hackensack	****		****	****
	Hallowell, Me	****			****
	Hoboken	'40		1.30	1.25
ì-	Hudson	:40		1.20	1.40
	Lynn, Mass	1.10		1.50	1.25
1-	Middletown	.90			****
	Mystic			****	
	New Bedford	85		1.50	1.40
	Newburyport	1.10		1.65	1.70
2	New Haven	.22		1.40	1.40
4	New London	*80 *85		1.40	1.40
	New York	.40	70	1.25	1.30
176	Norwalk	.70		1.40	
	Norwich	*90		1.45	
	Pawtucket Philadelphia	.90		90	****
	Portland	190		1.45	1.50
	Portland Portsmouth, N. H	1.10		1.60	1.70
	Providence Poughkeepsie, N. Y	.80	1.25	1.40	1.40
0	Rockland	.90			1 40
	Rockport				
	Saco.	1.00	** *	****	
	Sag Harbor	1.00	****	1.60	1.60
	Salisbury Pt., Mass Stamford				
	Stamford	:65			****
	Saybrook	*75			
	Taunton				****
y	Troy. Warren, R. I.	65			
y	Warren, R. I	.82		1.45	1.60
it	Wareham Weymouth			1.40	1.65
e	Weymouth				1.25

*3c. per bridge extra. † And Sound Towing. Harbor Freights, 40 cents.

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, Aug. 8, 1876.

Pig Iron.-The market continues inactive, with no immediate prospect of change so far as we can see, and the past week has probably been as dull as the dullest of all the dull weeks and disturbing influences, is not calculated to help matters, but rather the reverse. The ro. cent failures in Schuylkill county have also caused an uneasy feeling, but it is hoped the effects will only be local. The demand is entirely for small lots, for which full prices are paid, and there is a steady tone to the market at our quotations. A sale of 3500 tons (Schuyl-kill county Iron) is just reported, but unless the quality of the article is distinctly specified. quotations would probably mislead. We understand, however, that the price is about \$19the Iron, Gray Forge and No. 2, and although the seller declines giving particulars, we have good grounds for believing that the above statement is essentially correct. No. 1 Foundry, \$22 to \$22.50; No. 2 ditto, \$20 to \$21, and Gray Forge, \$19 to \$22. Market quiet and steady.

ORES .- There is some inquiry for Ores, with offerings f. o. b. at Richmond, Va., as follows : Magnetic, \$4; Specular for Bessemer, \$4:50; Selected ditto, 65 to 70 per cent. of Metallic Iron, \$5. At Cleveland, Lake Superior, \$7, and

BLOOMS. - There are inquiries for Blooms and quoted below, but it is frequently possible to Billets, with sellers at the following quotaget them considerably lower, men being tions; Charcoal Scrap Blooms, \$47; Charcoal commonly willing to run if they can clear ex- Ore Blooms, \$41 to \$42; Charcoal Billets of supenses, which is much better than having perfor quality, from \$60 to \$62; and Bars for converting into Steel, made of best Champlain Iron, \$75.

BAR IRON.-There is no improvement whatever, and the trade is as dull as it possibly can be. Consumption is very limited, and as the demand is confined to supplying immediate wants, sales are unimportant at irregular prices, and on the whole, proba-

The best brands are still firmly held at full rates, but inferior grades are difficult to move, buyers being averse to enter into extended operations on any terms. We quote 2.15c. to 2.35c., with a weak market on !ower quall-

RAILS .- There is no demand of any importance, and this branch of trade seems to be sharing the depression in common with others. The mills have still orders on hand sufficient to last for some time, but buyers would be met freely; and for prompt cash, no doubt concessions would be made. Meantime we quote latest transactions at \$57 to \$58, at mills, for Steel Rails, and \$39 to \$42 for Iron Rails, with a late sale of 1500 tons at \$40.

OLD RAILS.-The demand is light, and lower prices would have to be accepted under any pressure to sell. The offerings are light, how ever, and in strong hands, so that the market may be quoted quiet and steady at \$22.50 to \$23, with small sales at outside figure.

SCRAP .- The market is weak, and to effect sales concessions would have to be made. We

cans, &c., \$7.25 to \$7.50; good Bright Tin, do., \$7.25 to \$7.50; Coke, leaded, 14x20, \$6.871/2 to

LEAD -Common Domestic is but little sought after, but stock is small and market firm, at 7.10c. to 7.121/2c., currency. Foreign remains dull and nominal, at our last quota-

Shot.-The demand is increasing and prices firm. We quote, with 10 per cent. discount, cash 130 days: Drop Shot in 25 lb. bags, 9%c.; in 5 lb. bags, 10%c.: Buckshot in 5 lb. bags. in 5 lb. bags, 10% c.; Buckshot in 5 lb. bags, 10%c.; Bar Lead in 5 oz., 1/2 lb. and 1 lb. bars, 8%c.

OLD METALS .- Brass and Copper are weaker. Old Lead is scarce and wanted. We quote: Heavy Old Copper, 161/c. to 17c.; Light Tinned Copper, 151/c.; Copper Bottoms, 14c.; Heavy Red Brass, 131/2c.; Light Red Brass, 13c.; Heavy Yellow Brass, 11c.; Light Yellow Brass, 10c.; Heavy Clean Pipe Lead, 6c.; Junk Lead, 51/4c.; Tea Lead, Light Paper, 6c.; Tea Lead, Heavy Paper, 5c.; New Zirc Clippings, 41/c.; Old Sheet Zinc, 4c.; Yellow Brass Turnings, 8c. to 10c.; Red Brass Turnings, 10c. to 12c.; Plumbers' Lead Joints, 61/2c.

BOSTON.

BOSTON.

Aug. 5.—Pig hangs in a very flabby manner. The sales are about nothing, and the quotations are from \$20 to \$25 for Gray Forge to No. 1.

Bar is still quoting at a variety of prices between \$49 and \$55, with the tendency of all sales toward the lower figures. In common Iron a small business has been done at from \$42 to \$46, according to buyers' credit. Steel holds a small jobbing business at steady prices. We quote: American Tool, 14c. to 15c.; American Machinery, 8%c. to 9%c.; Bessemer Tires, 5%c.; Sweet's Excelsior Tire, 7%c.; English Tool, 15%c., gold. Copper is a point lower from the pressure of holders to realize, and 19%c. to 20c. is the range of their quotations, though a party wanting a 20,000 pound lot would be very loth to offer over 19c., cash, at which price be could probably fill his wants. The demand for Manufactured Copper is moderate, with prices still steadily held. For manufactured we quote: New Sheathing, 31c; Bolts and Braziers, 32c.; Yellow Metal Bolts, 26c.; do. Sheathing, 21c. Lead rules very firm, with a small stock upon the market, and little or nothing offering to arrive. We quote: Pig., 7%c. to 7%c. for Domestic; Sheet, 10c.; Pipe, 9%c., currency; Tin Lined Pipe, 16%c.; Bar Lead, 9%c., less usual trade or 10 per cent. discount. Antimeny quotes nominally at 16c., gold, for Boeton spot lots. Speller is very listless and easy at 7%c. to 7%c. Tin holds steady with a small business. The result of the Dutch auction of Banca secured a decline of 2f., being, however, all taken by the London combination at 43%c. We quote? Haises: Charcoal I. C., \$7.50; Coke, \$6.25 to \$7.00; and Terne at \$7.50 to \$8, gold.—Commercial Bulletin.

ST. LOUIS.

Mesars, Spooner & Collins, Iron commission Messrs. SPOONER & COLLINS, Iron commission agents, 409 North Third street, St. Louis, under date of Aug. 3, report the Iron market as follows: Our market for Pig Iron is still very quiet, with few sales and a very light demand. Prices same as last week:

Prices same as last week;
Mo. Stone Coal, No. 1 F'dry . \$25.00 @ 26.00-4 mos.
" No. 2 F'dry. 23'00 @ 24'00-4 mos.
No. 2 F'dry. 23 00 @ 24 00 4 mos.
" Charcoal, No. 1 F'dry 23'00 @ 24'00-4 mos.
" No. 2 F'dry 22'00 @ 23'00-4 mos.
" Gray Mill 22.00 @ 23.00-4 mos.
Tenn. Charcoal No. 1 F'dry., 23'00 @ 24'00-4 mos.
Tenn. Charcoal No. 1 F'dry 23'00 @ 24'00—4 mos No. 2 F'dry 22'00 @ 23'00—4 mos Gray Mill 21'00 @ 22'00—4 mos
Tenn. & H. R. Coke Iron No. 1
F'dry 25.00 @ 26.00—4 mos.
Tepu. & H. R. Coke Iron No. 2
F'dry 23.00 @ 24.00-4 mos.
Tenn. & H. R. Coke Iron Gray
Mill
H R Charcoal No. 1 F'dry 25:00 @ 26:00-4 mos
H. R. " No. 2 F'dry., 24'00 @ 25'00-4 mos.
H. R. "No. 2 F'dry. 24.00 @ 25.00—4 mos. H. R. "Gray Mill 24.00 @ 25.00—4 mos.
Massillon Iron. No. 1 29'00 @ 31'00-4 mos.
8. Ohio Am. Scotch 24'00 @ 26'00-4 mos.
Mo. Charcoal Blooms 50.00 @ 60.00-4 mos.
" Scrap " 45.00 @ 50.00-4 mos.
Mo. Charcoal Hammered
Billets 75 00 @ 80 00-4 mos.
Assorted Bar Iron @ 21/2 rates.
No. 1 Wrought Scrap '90 @
No. 1 Wrought Scrap. '90 @ Heavy Cast '65 @ Light Cast '45 @
Light Cast " 45 @

thande lower than last week. based on actual sales, as follows. The usual time, 4 mos., is allowed on the quotations below:

HOT BLAST CHARCOAL.	
No. 1 F'dry, from Hanging Rock Ores.	\$23.00 @ \$5.00 \$2.00 @ \$3.00 \$0.00 @ \$1.00
	\$0.00 (0) \$1.00
and Tennessee Ores	22.00 @ 23.00
and Tennessee Ores	51.00 @ 55.00
" 1 Mill, from Alabama, Georgia and Tennessee Ores	20 00 @ 21.00
HOT BLAST STONE COAL AND CO	KE.
No. 1 F'dry, from Hanging Rock Ores.	\$22.00 @ 23.00
11 9 11 11 11	21.00 @ 22.00
" 1 Mill, " " "	19.00 @ 21.00
" 1 F'dry, from Alabama, Georgia	
and Tennessee Ores	22.00 @ 23.00
" 2 F'dry, from Alabama, Georgia	
and Tennessee Ores	20·00 @ 21·00
" 1 Mill, from Alabama, Georgia and	
Tennessee Ores	19.00 @ 21.00
No. 1 F dry, from Missouri Ores	- @ -

No. 1 F dr	y, from Miss	souri Ore	8	- @	-
" 1 Mill,	5.6	0.0	*****	24.00 @	25.00
	COLD BL	AST CHA	RCOAL.		
Car Wheel		ng Rock essee Oro ma and	8	35.00 @ 28.00 @	
Ores	from Kentu			28.00 @	

CINCINNATI.

guote: Wrought, \$25 to \$27, with sales at \$26, and Cast, dull, \$16 to \$19.

Nalls.—There is no improvement in the demand, and sales are slow at \$3.25, with 25 to 35 cents per keg discount to purchasers of large lots.

Tin Plates.—The late advance is well maintained, and there is an increased demand, particularly for Coke Plates. We quote in United States currency as follows: I. C., 10x14, \$8.25 to \$8.75; I. X., 10x14, \$10.50 to \$11; Best Charcoal, leaded, 23x20, \$15 could fig to there good brands, \$14.50 to \$15; good fair, \$14 to \$14.50; Bright Tin, for cans, &c., \$7.25 to \$7.50; good Bright Tin, do., \$12.50 to \$15.00 to \$15.00

	CHARCOAL.
Hangi	ng Rock No. 1 10 ton. \$23.50 @ 24.00-4 mos.
F.	No. 2 22 00 @ 22.50-4 mos.
5.6	" Forge 21 '00 @ 21 '50 -4 mos.
South	ern Brands No. 1 23.00 @ -4 mos.
	" Forge 20.50 @ 21.00 -4 mos.
Virgin	!a No. 1 23.00 ₼ —4 mos.
**	No. 9 21.50 @ 22.00-4 mos.
56	Forge 21 00 @ -4 mos.
	STONE COAL AND COKE.
Hangh	ng Rock No. 1 P ton \$21.00 @ 24.50-4 mos.

..... 19·00 @ 22·00—4 mos. 26·00 @ 27·00—4 mos. 23·00 @ —4 mos. 24·00 @ 24·50—4 mos.

CHATTANOOGA.

Mr. S. B. Lowe, under date of Aug. 5, reports as follows: Since last report a few hundred tons Mill Irons have found a market north of the Ohio River, while the Southern foundries are being supplied from this point. The following are the average quotations:

COKE.

	No. 1 Foundry, extra. \$21.00 @ 22.00 No. 1 Foundry 19.50 @ 20.00 No. 2 Foundry 18.00 @ 19.00 No. 1 and 2 Force 18.00 @ 16.00	
i.	No. 1 and 2 Forge	1
	HOT BLAST CHARCOAL.	1
	No. 1 Foundry. \$21.00 @ 23.00 No. 1 Foundry. 199-0.2 No. 2 Foundry. 17-00 @ 19-00 No. 1 Foundry. 15-00 @ 19-00 No. 1 and 2 Forge. 15-00 @ 16-00 White and Mottled 14'50 @	
	COLD BLAST CHARCOAL.	-
	Car Wheel Metal \$22.50 @ 27.00 Forge Metal 18.00 @ 20.00 Cast Scrap, Heavy per fon, 12.00 @ 14.00 Cast Scrap, Light 8.00 @ 10.00 Old Car Wheels 17.50 @ Old Rails 20.00 @ 21.50 No. 1 Wrought Scrap per lb., 3c. @ No. 2 Wrought Scrap 5.00 @	1 1 1 1 1

CLEVELAND.

Messrs. C. E. Bingham & Co., 25 West Main

market as follows, 4 mos. time:
FOUNDRY IRON.
No. 1 Lake Superior Charcoal \$27.00-4 m.
No. 2 " 26.00-4 m.
No. 1 Anthracite 25 00—4 m.
No. 2 4 23:00—4 m.
No. 1 Bituminous
No. 2 " 28:00-4 m.
No. 1, Cherry Valley Am. Scotch 27 00-4 m.
B—1 " 26 00—4 m. No. 2, " 24 00—4 m.
No. 2, " 24.00-4 m.
No. 1 Massillon 26.00-4 m.
B-1 24:00-4 m.
No. 2
CAR WHEEL AND MALLEABLE ARON.
No. 8 Lake Superior Charcoal\$27.50-4 m.
No. 4 4 27.50—4 m.
Nos. 5 & 6" " 27:00-4 m.
BESSEMER IRON.
Nos. 1 and 2 Lake Superior Charcoal \$27.00-4 m.
FORGE IRON.
No. 1 Gray\$22.00—4 m.
White and Mottled 20.00—4 m.
BALTIMORE.

Messrs. Wyerh & Brother, Iron and Steel merchants, 46 and 48 South Charles street, report us the following prices under date of Aug. 8: This market has ruled dull and stagnant for the past week, but quite ilrm at unchanged quotations:

AMERICAN REFINED BAB IRON.

1 to 6 wide by 1½ to 1 thick... 2½ to 2 4-10c.

1 to 4½ wide by 1½ to 2 thick 1... 2½ to 2 4-10c.

1 to 6½ wide by 1½ to 2 thick 1... 2½ to 2 4-10c.

10 to 10 thick 1... 2½ to 2 4-10c.

10 to 10 thick 1... 2½ to 2 4-10c.

10 to 10 thick 1... 2½ to 2 4-10c.

10 to 10 thick 1... 2½ to 4 thick 1... 2½ to 4c.

10 to 10 thick 1... 2½ to 4 thick 1... 2½ to 4c.

10 thick 1... 2½ to 4 thick 1... 2½ to 4c.

10 to 10 thick 1... 2½ to 4c.

10 to 10 thick 1... 2½ to 4 thick 1... 2½ to 4c.

10 to 10 thick 1... 2½ thick 1... 2½ to 10 t AMERICAN REFINED BAR IRON.

Cast Spring Steel. 9 to \$\frac{9}{3} \text{C}. Homogeneous Steel Plats 9\frac{9}{3} \text{ to 100 lbs... \$\frac{9}{3} \text{ to 100 lbs... \$\frac{9}{3} \text{ to 100 lbs... \$\frac{9}{3} \text{ to 157} \text{ to 15c. per pound.} \text{ To 100 ps... \$\frac{9}{3} \text{ to 15c. per pound.} \text{ 10 9 8 7 6 25c. per \$\frac{1}{3}\$ Ltana Horse Nails. 23 24 25 26 25c. per \$\frac{1}{3}\$ Clobe Horse Nails. 23 24 25 26 25c. per \$\frac{1}{3}\$ Clobe Horse Nails. 20 25 26 25c. per \$\frac{1}{3}\$ Clobe Horse Nails. 20 25 26 25c. per \$\frac{1}{3}\$ Clobe Horse Nails. 20 25 26 25c. per \$\frac{1}{3}

been gradually depressed to such a low level that production must necessarily experience a check. Stocks in the hands of both dealers and consumers are admitted to be but moderate, and with the extreme case in money matters, there is now every inducement for the trade to re-enter the markets. There is room for a steady improvement on a sound basis, and it is at the same time to be hoped that at this juncture larger operators for a rise may not interfere, inasmuch as ill-timed speculation would spoil everything, and soon be followed by another still more serious recoil. Copper.—Prices have of late sustained such a rapid depreciation that the output of Copper will have to be curtailed, both in England and Australia. Whether this will be likewise the case in the United States and Chill we are unable to judge. The latter country is in an exceptional position, being disturbed in its exchanges by the silver fluctuations. We foresee that its output and shipments will henceforth be fitful in the extreme. Business here has been much circumscribed, and we have declined in sympathy with Londou. We quote nominally, at the close: Chill Bare, 190: 760 francs; Common ditto, 192:50; Ingots, 200: 76 rough Cake, 200; and pure Corocoro Ore, 200. Copper, at the decline, attracts no attention at Havre, and quotations are merely nominal, first brands Bars being quoted 198; good current ditto, 192:50; and Lota and Urmeneta, 190 to 191:20. Marseilles remains 'feebly supported and Inactive. Red Tokan, 190 francs; small Refined Ingots, 200; Bolts, 245; Sheathing, 235; and Yellow Metal ditto, 210 to 215, leas 3 per cent, discount for cash. Tin.—Although it is readily granted on all hands that this metal has now finally entered upon a period of greater safety to holders, the statement of deliveries is not received with such unreserved faith as used to be the case formerly, for reasons we have explained in a former review. We are nevertheless well sustained here. Banca, deliverable at Paris or Havre, 208; Straits do., 200; and English, 51:

BELGIUM.

(Revue Universelle).

(Revue Universelle).

BRUSSELS. July 23, 1876.—Iron.—The inquiry for fron for domestic purposes has become slacker of late, but some orders originally intended for Germany, for upward of 500 Iron trucks for Roumania, have dropped in. Foreign orders are not plentiful just at present, and many of our iron-masters have resorted to making consistent abroad, especially to England. They will be content if they clear the bare cost of their Iron. Gradually, however, matters will be looking up in Belgium. It is now put down as pretty certain that from will experience no further drop in Europe, except in special cases where individual financial necessities may lead to a sacrifice. It is believed that the price of Iron will be upheld, even supposing that coal decline another 5 per cent. Coal.—During the past three years there have been made so many additional discoveries of Coal in Belgium and adjacent countries, machinery for deep mining has so much improved and increased, and wigges have been so considerably reduced that ourselves and neighbors are now able to produce large quantities at a reduction even-upon present rates and yet clear a small profit. The present stagnation in our country is felt with particular severity in the Lieges region. Charleroi is also entering upon a period of ereat quietude. Shipments by boat are now virtually at an end, and current wants are easily filled by rail, till the demand revives in fall. At Mons extraction has been much curtailed, although the stocks are not large.

GERMANY.

GERMANY.

(Borsenhalle).

Hamburg, July 29, 1876.—Metals.—We are glad to announce that the cereal crops of Europe, with a few raw exceptions, wear a most reassuring aspect, and that in consequence thereof the very best expectations are entertained with respect to the coming fall trade. Should these hopes be realized, the distress in many of the larger cities of Central Europe will be much relieved, and business in general will derive the greatest benefit therefrom. Add to thus the general exhaustion of stocks in second and third hands in the Metal trade in Germany, combined with an easy money market, and it may be assumed with a certain degree of confidence that we are slowly approaching a better turn in business, notwithstanding all that is said about paralyzed industry in our country. Copper.—There has been but little change in the German markets; the dealings are light, especially at Berlin, where the metal is very quiet at 80 to 86 marks for 50 kilos. Stettin is nominally 9350. Here seliers would have to make some concessions, and we do not beheve that Drontheim would bring over 87 marks, Minnesota 104, and Quincy 92. Tin.—The German markets are quiet. Berlin quotes Banca 81 to 81:50 marks, and English 75 to 76:50. Here Banca is 87 to 88; Common English, 83 to 84; and Refined, 84 to 85. Lead.—Nothing of special interest has occurred in the German markets; Berlin is steady at 29 to 21:50. Stettin quotes German 21 to 24, and Spanish at 29. Here a lot of English W. B. is offered on credit in order to induce a sale. We quote German, 22 to 22:50; English, 24 to 24:50; and Manufactured, 24:50 to 25. Spelter is inactive, and nominally 24 here, 23 at Berlin, and 21:73 to 22:60 at Bresiau, where sales have been made. at Berlin, and 21 75 to 22 60 at Breslau, where sales have been made.

(Koch & Vherboo

(Kock & Vierboom).

ROTTENDAM, July 24, 1876.—Tin.—Banca Tin has been extremely quiet during the week. Most consumers prefer to await the result of the Netherland Trading Society's sale, to come off to-morrow. Meanwhile, some tran-actions have been made to be delivered from the same at 443g guiders. Billiton remains in brisk request and large dealings are reported at 43% to be delivered in September and October. It seems evident that speculaters are in the market.

CAPE OF GOOD HOPE.

Tenn. & H. R. Coke Iron No. 2
Tenn. & H. R. Coke Iron No. 2
Tenn. & H. R. Coke Iron Gray
Mill.

September 1. R. Coke Iron Gray
Mill.

September 2. R. Coke Iron Gray
Mill.

September 2.

if the price fell, unless the Copper ore assay increased in proportion, it must make a diminution in their profits, and, therefore, it was necessary to get as much from the mine as they could. The Ookiep Copper Offine.—The deposit of Copper ore at Ookiep Copper Mine.—The deposit of Copper ore at Ookiep is not what the Americans call a fissure vein. The captain thought it was quite clear, but it was not, it was a deposit not to be called altogether an irregular bunch or deposit, but was what in old mining used to be a well known kind of deposit called pipe veins. It was, in point of fact, a deposit of metailic mineral between the strita of the rock, and naturally it must follow all the undulations of the rock. At the 66 fathom level the strata must have flattened out considerably, for this deposit had not gone down to the 80 fathom level at the point at which the previous inclination of the strata would have brought it, but had flattened and gone away further east, and had lengthened very considerably, so that he would wish to explain to the directors that it showed no diminution whatever in the value of the deposit, but perhaps it would rather be the contrary.

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

> (From our Regular Correspondent) SHEFFIELD, ENG., July 22, 1876.

CHEAP MONEY.

It seems just a little paradoxical and even nore ironical that at this particularly dull commercial period money is far more plentiful in this country than it has ever been before. It is so cheap that the banks are giving the barest possible percentage for its use, the fact being that business is so excessively quiet and so lacking in enterprise that the bankers are not being asked for loans of any magnitude. Under these circumstances people, who pride themselves upon their business tact and prudence, are quietly buying up all the land and house property they can secure. I know of one ocal gentleman whose income is popularly supposed to be £65,000 per annum who is now selling all his shares and stocks for the avowed purpose of investing in real property now that prices are low. This is a safe policy, but it is not a mode of investment which increases our national wealth or adds energy to our commerce. The editor of the Economist (Mr. Walter Bagehot, a gentleman admitted to hold exceeding sound financial views), says:

"We have heard a person whose experience extends over more than 50 years say that he never knew money so cheap as it is this week. The common rate at call is %, though we do not think that as long as we have ourselves known the market, which is some years, though not as many as 50, that rate was ever before less than 1. The London and Westminster Bank only give at call, according to their new rule, 11/2 less than the Bank rate, or now per cent-certainly the least rate of interest we have ever known when any was given at all. Consols, as was natural, have shared the effect, and have risen since the beginning of the month as much as 3 3-16.

as much as 3 3-16.

"How long this extreme cheapness will continue it is difficult to say, especially as it does not prevent gold from being sent here in large quantities. Last week's bank return was considered excellent, but in the week the bullion has increased £1,317,000, in consequence of which the reserve in the banking department amounts to the unprecedented sum of £18,-934,000. Some years since we suggested that we should aim to keep something like £15,-000,000 as a banking reserve, and our plan was thought extravagant. But now we see the figures we suggested much exceeded. The explanations of this great increase are two—first, that money is cheap everywhere throughout the world; that credit is bad; that business is depressed; and, secondly, that we are calling in our loans for commercial purposes from all quarters.

"So much business is now everywhere quarters.

in our loans for commercial purposes from all quarters.

"So much business is now everywhere transacted on English capital throughout the world that even a reduction of it amounts to a large sum, and its repayment swells the tide of bullion further. All which can be said on the other side, and by way of augury of more active times, is that we possess, and have now for a considerable time possessed in unusual measure, the main elements of activity—cheap corn throughout the world, cheap money, and, on the whole, cheap raw material, and these must facilitate production; beside which, labor of most kinds is cheaper than it was. As time goes on, too, the stock of goods of all soris must be renewed, and, therefore, sooner or later, though possibly not very soon, we may expect to see an important increase of activity, and a consequent revival in the value of money. Of the ultimate effect we may be sure, but we must not be disappointed if some considerable time—some months even—pass before we see so great a change as we could desire."

This is, doubtless, quite correct, but it is

This is, doubtless, quite correct, but it is evident that before we reach the new state of things we have a serious slough to pass through. Already we are having a series of

HEAVY FAILURES,

and are troubled with rumors of others to oc-cur almost immediately on a much larger scale. In looking over my list of suspensions during the past week or so, I first find a Mr. John E-lward Cooke, of Change Alley, London, a Elward Cooke, of Change Alley, London, a stock and share broker, whose active ingenuity of mind enabled him to incur liabilities totaling £136,946, whilst his assets were set down at £8487 nominally, and in reality were only worth a much smaller amount. Next in order is the stoppage of Sir Charles Walker, carrying on business at Bradford, Yorkshire, as a worsted manufacturer, who owed something like £65,000, and who is said to have a good deal of public sympathy—an asset I am afraid his creditors will find very difficult to realize in cash. Then a Mr. Joseph Matthews, of Harrogate, has gone down, owing £50,000, with £3000 assets; and Mr. John R. Redman, worsted manufacturer, of Haworth, near Bradford, has succumbed with debts reaching £40,000, and assets of a reputed problematical nature. Next

The debts of the latter are said to be £63,000, much of it incurred on account of certain shipping investments. The firm is connected, with this gentleman, and, if current rumor be in any degree reliable, they have so far anticipated their own stoppage as to have sent off an agert to America to take possession of the stock there. There are also other rumors here of the gravest possible nature, but I do not think any good purpose would be served by referring to them in detail at present. In the North, the difficulties of Thomas Vaughan & Company, the great Middlesborough iron-masters, have been the talk of the week, but the creditors have fortunately obviated a crash which would have pulled down a dozen other which would have pulled down a dozen other a limited liability company, the creditors to be paid a certain proportion of their debts in shares. Apart from this there are other most damaging reports in circulation as to the status of other Northern houses—a state of things which almost invariably accompanies a long depression of trade.

THE HEAT AND FIRES.

Some waggish fellow or other has remarked, not very oracularly, that fires and heat always go together. This truism everybody would admit without question, but it has not been until recently that it has been recognized that extremely hot weather always produces more great conflagrations than any other temperature. This rule has been well exemplified of late, for the heat has been terrible, and the thermometers have got so used to it that they won't look at anything under about 80° in the shade and 120° in the sun. Many deaths from sunstroke have occurred. London has, as usual, had the principal proportion of the fires. On Saturday a carriage manufactory in Golden Square—auriferous name!—was destroyed, the damage being set down at £60,000. On Tuesday night the Manor Steam Saw Mills, Chelsea, were burned down, with some adjoining premises, the estimated less being 50,000. On the settlements. Manor Steam Saw Mills, Chelsea, were burned down, with some adjoining premises, the estimated loss being £50,000. On the following day the Dundee Wharf, Wapping, caught fire, and with some adjoining warehouses, quickly gutted, the total damage being very large, but not exactly estimated.

WANTED AN EXPLOSION.

not a single one of any moment having taken place during the week. This absence of the place during the week. This absence of the explosive element is so ominously suggestive that I beg my friends of the "navy," "blasting" and other reckless persuasions, will reflect before they do it again. Or, perhaps it might be better for the autonomy of their own limbs if they would reflect before playing with dangerous muterials of any sort, or would chalk up a warning memorandum to their successors prior to placing warm tobacco pipes in the same pocket as that containing a large assortment of dynamite cartridges. I may just note in passing that the deaths from the shocking explosion on board the Thunderer iron-clad now number 42, with every likelihood of still further mortality. further mortality.

THE MERSEY TUNNEL

project is again afoot, and is this time thought likely to be carried out. The distance to be traversed would be little, if anything, over a mile, and whatever the cost the traffic is so great and incessant that it must pay. The population of Liverpool alone is 790,000, and of Birkenhead, on the other side of the river 200,000, beside which there is an enormous quantity of goods traffic.

THE FIRST SI-TON GUN

for the Italian government was shipped from Newcastle for La Spezzia last week by the first vessel which passed through the new swing bridge. The following full description is given of this biggest of big guns: "Its total length is 33 feet, the length of bore 30 feet 6 inches, and the caliber is 17 inches. The weight of the armor piereing shot or shell is 2000 lbs., while the weight of the proof shot is 2000 lbs., The weight of the charge is expected to be between 350 and 380 lbs. It is estimated that the work developed by the shot when it quits the muzzle will be about 33,000 tons, which, in other words, is equivalent to raising a weight of 3900 tons to the hight of one foot. The total weight of the gun, without its carriage, is 101 tons; the outside diameter is 78 inches, while the outside diameter of the muzzle is 32 inches. The shot will pierce an armor plating 30 inches THE FIRST 81-TON GUN tons; the outside diameter is 78 inches, while the outside diameter of the muzzle is 32 inches. The shot will pierce an armor plating 30 inches thick. By hydraulic pressure the shot is lifted to the gun, the charge rammed home, the gun run out and in, lifted and depressed. The cartridge employed resembles a bag of flour. It is 52 inches long and 15½ inches in diameter. It is made up of pieces of powder like screened coal, each about an inch and a half cube, made to burn slower than ordinary powder. The projectile, of chilled shot, is 4 feet long, and weighs 2000 lbs. The velocity of the discharge will be tremendous. From the lighting of the cartridge to the shell quitting the muzzle the lapse of time is only the fortieth part of a second. The steel tube for this remarkable weapon was made by Messrs. Thomas Firth & Sons, at the Norfolk Works, Sheffield. It was cast in two parts. For the breech part the weight of the ingot was 17 tons; in the forged state, 15½ tons. For the muzzle part the weight of the ingot was 17 tons; in the forged state, 13½ tons. The total weight of the ingots was therefore 37 tons, and of the forgings 30 tons."

SCOTCH PIG IRON

is very quiet, and the transactions since I last is very quiet, and the transactions since I last wrote really call for very little comment. Sales are on a very limited scale, and freights to New York are lowered to 2/. According to John E. Swan & Bros. prices current of July 21 there are now 116 furnaces in blast in Scotland and 71,449 tots in Connal's stores, an increase of stock during the week of 3500 tons. The total decrease in this year's shipments, up to date, is 57,299 tons. Mesers. James Watson & Co. say that "shipping iron is very quiet and in some that "shipping iron is very quiet and in some instances prices are lower." Messrs. Wm. Colvin & Co. report: "Shipments are small and at the moment the general demand is languid." The current makers' prices are about as follows, the different merchants just quoted varying 6d.

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lartsherrie,	66										64/6	57/
oltness.	46		0.1								67/6	57/
ummerlee,	9-5											56/
angloan.	6.6		0 0									56/6
arnbroe,	9.6											55/
alder, at Port	Dunds											56/6
lengarnock,												57/
ginton.	4.0											56/
almellington	69										Section 4	55/
hotts, at Leit											66/	56/6
innetl at Bo									4		58/6	54/6

TRADES OF SHEFFIELD

TRADES OF SHEFFIELD.

The tropical temperature of the past week has to a great extent hindered work at such has to a great extent hindered work at such has to a great extent hindered work at such has to a great extent hindered work at such has to a great extent hindered work at such has to eake their so of execution. On Friday last the heat was so intense that the puddle s had to cease operations for several hours, it being to all intents and purposes impossible for them to pursue their avocations.

In hardly any respect has the past week brought about any alteration worth noticing, either in relation to prices or to demand. There have again been several sales of various sorts of pig iron, mainly, however, of foundry qualities, at prices ruling on the average of the past descriptions are steady in price also.

Merchant irons are totally unchanged in price, and are almost wholly neglected by the "ought-

to be" buyers. Very few descriptions of local production are changing hands, there being only a very slight call indeed for certail kinds of bars suitable for steel converting purposes. In the Leeds district the depression of trade is quite as severely felt as it is in this immediate vicinity. The latest monthly report of the Leeds Chamber of Commerce states that "there does not seem to be any resumption of activity in the heavy branches of the iron trade, and the forges are but poorly employed. Inquiries for locomotives are few, and orders are difficult to obtain. The engineering and machine trades have fallen off, and many works have far less than their full complement of hands. The same may be said of the tool trade, and the cut nail makers have also experienced a falling off in orders." All this and more, probably, might be said of the corresponding industries of the to be" buyers. Very few descriptions of local in orders." All this and more, probably, might be said of the corresponding industries of the whole of South Yorkshire, Barnsley and North Derbyshire. Many of the leading houses just outside Sheffield ordinarily do a very considerable business in all kinds of castings, and many of them have a reputation for special goods, as well as for builders' requisites, girders, &c., but none of them at the present juncture are even half employed, and most are thinning out the number of their workmen. On all sides the most exact and minute economies are being most exact and minute economies are being enforced, and it is hardly too much to assert

DEATHS OF SHEFFIELD MANUFACTURERS.

On Wednesday last Mr. Charles Wardlow, senior partner of S. & C. Wardlow, steel manufacturers, Sheffield, died after a short illness. Mr. Wardlow was not of strong constitution, but he had great mental vigor and perseverance, which rendered him very successful in business. The firm, as your readers know, have a high reputation in America for really fine steel. Mr. Wardlow was a member of the Sheffield School Board, and was at all times to the fore in educational matters. His loss in this respect will be very deeply felt. I have also to record the death of Mr. William Talton Bury, which took place on Saturday, somewhat unexpectedly. Mr. Bury was a good business man. He was only 41 years of age, and had long been the manugling director of Burys & Co. (limited), Penistone Road, Sheffield, who have a good reputation for their steel, patent picks, saws, &c.

of a very sudden or great demand—such a another railway mania—they migot require texport a quantity, but that requirement would be only of a temporary nature, as they could rapidly increase even existing facilities for production.

"There is keen competition among the American steel and iron manufacturers, who are not only keeping the home trade in their own hands, but are pushing into our Colonia markets, especially into Australia and Canada. The Cavadians, it would appear, complain very much of their country being overrun by American much of their country being overrun by American merchants. In regard to hardware, a grea portion of that trade is hopelessly gone. The secondary descriptions of cutlery are nearly all supplied by American manufacturers; the higher classes, with known names such as Rogers, Wostenholm, Harrison, and a few others, are still in demand. How long this demand may continue will, of course, depend upon the American manufacturers themselves—whether or no they are able to convince their customers that their cutlery is equal to the best Sheffield make. To two leading causes is the present condition of things attributable—the prohibitive tariff rates, and the prejudical changes commencing with the coal famine of 1870, which reached its climax in 1873. Of late years the Americans, with their unjust high portion of that trade is hopelessly gone.

English manufacturers regard it as most un-English manufacturers regard it as most unjustifiable that while America charges a higher duty on a ton of best steel than Russia, Germany and France put together; yet all American goods—reaping machines, sewing machines, forks, shovels, and all the multitudinous array of "Yankee notions," with which the British public is so familiar—come into this country duty free. The American, by imposing duties varying from 35 to 60 per cent., practically excludes English goods from American markets, and yet all the English markets are open to him. This one-sided arrangement operates most injuriously against the manufacturers of this country, who stoutly maintain that there ought to be reciprocity. England takes every year large quantities of American manufactures, and also millions of pounds storing of the spare produce of the latter and the whole of these power terms. American manufactures, and also millions of pounds sterling of the spare produce of the States, and the whole of these manufactured goods, as well as the produce, enter our ports duty free. While the American manufacturer is thus able to close his own markets against English competitors, and at the same time have the run of the English markets, is it any wonder that the English iron, steel and cutiery trade with America should be so seriously affected? The taruff, which is most unjust and practically prohibitive, is believed to be the work of the manufacturers of Pennsylvania, who by keeping out English productions secure

most exact and minute economies are being enforced, and it is hardly too much to assert that if no change takes place within the next six months, by the end of that period half the whole producing power of the district will be laid off. In many branches of industry the shoe is already pinching most painfully, and there are not wanting rumors as to the stability of more than one iron works and colliery corern within a radius of 20 miles or so.

It is in the coal trade, however, that the most serious state of things is likely to come about, the output being now treble the demand, whilst many of the collieries have been sunk at the most enormous outlay of capital. One or two collieries are already closed, and preparations are being made for closing several other old pits, which cannot be worked at a profit at existing quotations. There is now also an exceedingly keen competition between the local coal owners and those of Northumberland and Durham for the London trade. The northern proprietors have the great advantage of sea freights to the metropolis, by which, aithough the relative distance is so much greater, they save fully 2/ per ton, as compared with the railway rates from this district. Railway car-

all remain inactive so far as iron is in question, the monotony being difficult for many firms to bear without stoppage of payments. In the Birmingham hardware trades there is a little more activity, excepting the edge tool, implement and a few other branches. At Willenhall, the strike of 400 workmen for an advance of 10 per cent. has terminated, by the arbitrator to whom the dispute had been referred, giving an increase of 7½ per cent. From the Welsh and Monmouthshire ports last week's shipments of iron, rails and steel were 7332 tons, mostly to Autwerp, Amsterdam, Naples,

proprietors have the great advantage of serificial to the metropolis, by which, aithough the relative distance is so much greater, they save fully 2/ per ton, as compared with the railway rates from this district. Railway carriage and wagon hire from South Yorkshire to London amount to fully 10/ per ton, beside terminal charges for the tax and delivery, so that the hard Barnsley coal put into London and 23/ per ton does not leave much profit either for the merchant or producer.

With regard to the proposed return to the 10-hours system of working, there does not observe that the change is in every sense desirable, but some of them—including two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concent that the change is in every sense desirable, but some of them—encluding two or three concents of great mugnitude—are not in a position to risk a stifke. The Iron Trades Employers' Association again met in Leeds last week, and reports were read from all parts of Lancashire and Yorkshire, favoring the proposal to restablish the 10 hours. Nothing definitely was settled, but it was tentatively resolved that the retrogression, if enforced, should be primarily applied to the engineers, iron founders, machine makers and shipbuilders.

In cutlery there is really and truly "nothing doing," and in this branch, too, Madame Rumor is very busility at work, with, perhaps, some little reason.

DEATHS OF SHEFFIELD MANUFACTURERS.

On Wednesday last Mr. Charles Wardlow, senior partner of S. & C. Wardlow, steel manufacturers, The constant of the season of

	42		d.	£	R.	d.
Merchant bar	6	15	02	7	0	1
Merchant bar, in Wales	6	5	00	6	10	-
Staffordshire	7	7	6 @	9	15	-
Ноор	8	0	00	9	0	- 1
Shees	10	0	00	11	0	- 1
Nail rod	7	10	00	59	0	-
Bar, best crown	7	7	60	8	10	- (
Boiler plates	9	15	00	10	4.0	- 1
	Line		- 40		10	
Tin Plates: f. o. b. sn I	£		- 40			
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Centennial Notes.

JONAS, MEYER & COLVER,

of the Continental Steel Works, Sheffield, exhibit a case of their finest crucible tool steel at 211, 18/10 to fit out a barge to accompany Anne had become mixed with particles of brass worn gle fastened and properly caulked, with water-B. 10, Machinery Hall. In a careful examina- Boleyn from Greenwich to Westminster, stock- from the bearings, when fresh oil was turned tight ceiling to the top of the bilge, and three tion of this display our iron and steel men cannot fail to observe the extraordinary fine- kin of wine, ling, fresh salmon, great cels and train was decreased from 10 to 20 per cent. shall be eligible to the grades of the first-class ness and density of the fractured steel, which various other refreshments." On the occasion is made from the most celebrated brands of of "fetching" Queen Elizabeth from the Tower that fuel is saved by running heavy freight the above standard of strength and preparation 1870, which reached its climax in 1873. Of late years the Americans, with their unjust high tariff, and aided by the advanced prices which ruled at home, have been enabled to work in their manufactures in 1700, steel and hardware for their own consumption; and the conclusion come to by those best able to judge is that they have done this thoroughly. There is a good deal of "soreness" on this score. Not a few highest reputation in the trade that the finest of "fetching" Queen Elizabeth from the Tower to Westminster in 1558, they thought little of spending for the same purpose the sum of the most celebrated brands of "fetching" Queen Elizabeth from the Tower to Westminster in 1558, they thought little of spending for the same purpose the sum of miles per hour rather than at the usual low speed of 12 miles per hour. Of course, as a question of economy, it may be found that the extra wear of the road and the college of the road of the road and the college of the road of the road of the road and the colling stock will balance or exceed the lowest and and preparation for taking the above standard of strength and preparation that fuel is saved by running heavy freight to Westminster in 1558, they thought little of spending for the same purpose the sum of the road and the rolling stock will balance or exceed the lowest and preparation of the saved by running heavy freight to Westminster in 1558, they thought little of spending for the same purpose the sum of the road at Attercliffe, Sheffield (cast steel was spending for the same purpose the sum of the road at Attercliffe, Sheffield (cast steel was spending for the same purpose the sum of the roll in the second or taking the bottom, to be assigned a grade trains at a speed of from 18 to 20 for taking the bottom, to be assigned a grade will be above standard of strength and preparation that fuel is saved by running heavy freight to westminster in 1558, they thought little of the roin at the fuel is saved by running heavy freight trains at a speed of from 18 to 20 for ta

qualities can only be obtained by this process. Ifty from the country and retailing it at below In proof of the superior quality of steel made cost. Many charities were founded at different tled that light gradients are overcome much by this firm, we are informed that when one of periods in consonance with the wishes of our most eminent manufacturers of machinists' | donors, who had left lands, houses and money tools was entering into a contract with the Ger- for the purpose to the Guild. The ironmongers, man government to supply its armory with as we have indicated, were merchants as well tools, it was stipulated that this steel should us traders. Stowe writes that "They had large alone be used. It is claimed that the tools made from this steel will turn the hardest chill, and in consequence it is much used for large milling cutters. The tools made from this manufactured articles which they purchased of steel are said to retain their cutting edge to the the workmen in town and country, and of last, so that, although the first cost may be which they became general retailers. rather high, the less frequently the tool needs replacing the greater the saving effected, as the labor involved in making the tool is the most in Ironmonger Lane, a locality which was long important item of expense. These are the the headquarters of business, and in Thames chief points upon which the exhibitors base their claim to superiority, and upon which this the purpose in 1566. The guild was always class of steel maintains its reputation through- famed for its hospitality, and it may interest out England, France, Belgium and Germany for lathe tools, taps, dies, reamers, chisels, punches, &c. M. Diamond & Co., Hartford, Conn., are their principal agents for this country and Canada.

The Worshipful Ironmongers' Company.

Of the famous guilds of London that of the Ironmongers' Company is historically not one of the least conspicuous. We are accustomed to look to this age as one of centralization, but in 1462, when the Ironmongers' Company was incorporated by letters patent, though it had existed previously as a voluntary association, the ironmongers of London held in their hands the threads of a large portion of the home and foreign trade of the kingdom, most of their iron, which was chiefly obtained in the Forest of Dean, being wrought for them in the wealds or forges of Sussex, Surrey and Kent. The privileges accorded to them by Edward III. were confirmed and extended by several succeeding monarchs. Through them the English army and its mercenaries engaged on the Continent were supplied with arms and accouterments, the former including, in earlier times, daggers, black bills, pikes and sheaves of arrows, and the latter, back and breast plates, gorges and corslets. Among the assessments made upon the Guild by Royal or Parliamentary authority, as recorded in the books of the comhave again ruled very quiet, and prices are lower. At the Cornish ticketing at Truro on Tuesday, the copper standard was reduced £5 per ton; 3141 tons of copper ore were offered and realized £13,144.8/, an average of £4.3/6 per ton; 216 tons of pure copper sold at £100 fill up the privy purse. One of the heaviest per ton; 216 tons of pure copper sold at £100 fill up the privy purse. One of the heaviest per ton. assessments was that made by the Parliament of 1643, amounting to no less a sum than £20,000, and compelling the Guild to sell its plate. Notwithstanding the special privileges the London ironmongers had acquired, their business was encroached on from time to time by the energy and enterprise of country manu-

galley with two masts and ten oars being freighted with 21/2 barrels of gunpowder and the force registered on the dynagraph squibs and crackers, the whole being fired off by the number of foot pounds of force by "green men" habited as savages and carry- developed by a pound of coal, which ing torches, the demonstration being responded

banks. Notwithstanding many enforced exactions for the French wars and other purposes, the even the opening of the cylinder cocks. Even members of the Guild were ever forward in the the resistances of the track caused by heavy display of loyalty. Thus, in 1541, notwithstanding that Henry VIII. had compelled them to pledge their plate to add to the contents of frequently necessary on account of defective or his privy purse, they contributed a sum of poor lubrication. In one case where the oil the thickness required for wooden vessels, sining it with good cheer consisting of "1 kilder-

warehouses and vards where they exported and sold bar iron and iron rods; they had also shops wherein they displayed abundance of The guild has had successively its hall in All-

ballows, Staining (rebuilt by Queen Elizabeth), street, on land given by Sir Charles Draper for our readers to know something of what was set before its guests in 1718. The provision for entertainment embraced, among other ar ticles, four barrels of oysters, a goodly number of geese, turkeys, partridges, larks, with roast lamb, giblet pies, 12 lbs. of comfits, Banbury cheeses, spiced bread; and for potations, Gascoyne wine, red and white port, and Canary rum. Of old there was more feasting than pecchifying at these banquets, and we are left without a record of the good things said, but it speaks much for the conviviality and sense of bumor of the wardens and brethern, that one John Henley was paid by them "for play ing on the tongs," 10/

The guild was at all time; conspicuous for its harities, and among these was the expenditure in 1723-'4 of "half the interest and profits" of its possessions for the ransom of British subects who were captives in Barbary and Tur-

The arms of this company are argent, on hevron gules, between three gads of steel azure; as many pairs of shackles or crest on a helmet terse; two salamanders combatant proper, chained and collared or; Legend: God is our strength." These arms were granted to the London ironmongers in 1435, be fore their incorporation by Lancaster, then King of Arms, and were confirmed by royal authority in 1530. The original salamanders which were selected on the supposition that like iron they are unburt by fire, came in time o be called lizards, and the Irish estate of the company is known as the Manor of Lizard .-Iron Trade Exchange.

Railway Resistances.

An interesting report on this subject was stitute of Civil Engineers, by a committee conisting of Messrs. W. P. Shinn and P. H. Dudey. Of this report the Railway Review makes a most interesting synopsis. It is self-evident that it takes more force to pull a given train over a

amount of force is readily found by dividing Ing torches, the demonstration being responded in the case of the engine used was 296, to by a cannonade from each side of the 545 pounds. The dynagraph was so sensitive that it recorded every movement of the lever of the throttle valve, of the reversing lever, and moisture are readily indicated and recorded. It was found that a large outlay of extra force is Another interesting conclusion arrived at is

saving of fuel. But it seems to have been setmore easily by an increased velocity just before attempting them.

These investigations also show a great waste of power caused by the depression of the ends of rails. These depressions are not noticed by passengers on account of the excellent springs of the passenger coaches; but the dynagraph gives immediate and reliable notice that a great increase in the consumption of coal is necessary to overcome the jolts caused by such defects in the track. The experiments so far made by the dynagraph indicate that this new field of investigation will develop some very important results in the operation of rallways and the saving of unnecessary cost in the department of transportation.

Iron against Wooden Ships.

In a recent issue Iron has the following article in which it discusses the advantages of Iron ships, and the value of wooden sheathing

Is an iron built ship more liable to receive damage on taking the ground than a vessel constacted of wood? This problem seems to have ngaged considerable attention in the United States, and the conclusion arrived at by the Council of the Underwriters' Association is. that vessels wholly built of iron are unsafe risks unless they are exteriorly sheathed with wood. This will astonish engineers and shipbuilders in this country, says the Shipping and Mercan ile Gazette, who have so long insisted upon the inferiority of wood as a building material when omnared with metal. The late Mr. Grantham, in his book on "Iron

Shipbuilding," claims especially for iron that a properly built ship will bear greater strains than one constructed of wood. In Fairbairn's work. tables of results are given from actual experinents, and it is shown that a wrought iron plate only three-quarters of an inch thick is able to resist a force equal to that required in the rupture of a 3 inch oak plank. The strength of dry English oak to resist a crushing force is 4.24 tons to the square inch, whereas wrought iron requires a pressure of about 31 tons to the square inch. The resistance of wrought iron plates to a force calculated to burst them follows a law different to that of oak, the resistance being directly as the depth, and of the latter as the square of the depth. It has been held by several writers that an iron built ship will bear a greater strain than a wooden built one when the hull is resting on unequal ground. The timber joints of a ship nade at the recent meeting of the American In- are not united either longitudinally, vertically or transversely, and the strength depends upon the sheathing which is attached to the ribs, whereas the plating of an iron vessel is made homogeneous by the riveting and laps. When the Great Britain was exposed for a whole win-

years; and to obtain greater security from the dangers arising in passing through canals or rivers, the following, among other rules, has been issued: "Steam vessels built of iron, not less substantially than required by the Rules of the New York Record for the highest class, but, in addition, having their bottoms built as solidly and defensively as those of modern steam vessels, being timber-filled between the frame of the floor, the filling in whole length well fastened to the floor plates. the bottom outside planked with wood to the top of the bilge, the planks of three-fourths into the boxes the power required to move the or more compartment bulkheads well caulked, for lake navigation. Iron vessels inferior to

Chambers Street, N. Y.

now they are in consequence discredited. Iron as a whole, and the underwriters look at them when covered with wood cannot be efficiently in detail. protected from leakage; therefore, if the plates both inside and outside cannot be got at to coat with paint, wherever water insinuates itself will be going on by corrosion. If this rule of classification is acted upon by underwriters a great blow will be inflicted upon the building of iron ships in Canada and the United States. Iron built paddle wheel and screw vessels have been introduced on the Mississippi and other rivers most successfully, and, so far as experience goes, they are worked more economically than wooden built steamers. The extra weight of hull caused by the wood which the iron would have to carry is a serious objection; the displacement being increased, the consumption would be augmented proportion-The Committee of Lloyd's Register have never attempted to make the owners of iron built river, lake and coasting steamers double the bottom of their vessels by wooden ings, is also a great advantage over the strings sheathing. They require all iron ships to be closely ceiled from the main keelson to the upper part of the bilges, and from there upward with either batten and space or close ceiling. By rule 35, also the frames and plating of the bottom of all vessels in the upper part of the bilges have to be thickly and efficiently covered with Portland or other approved cement, mixed with sand, to the satisfaction of the surveyors.

The shipowning interests are opposed to this addition of so many tons of material on the hulls of their vessels, submerging them a foot or more, and the subject is receiving considerable discussion in Canada and the States. Numerous letters and fly-sheets have been pub lished, and among the contributors to the controversey is Mr. D. Bell, of Buffalo, who supplies statistics relating to the iron built propellers belonging to that port. Action was taken against iron steamers because of the loss of the Merchant (iron) last year. This vessel was built in 1862, and her owners had never made any claim on the underwriters until she was lost at Racine. During her existence of 13 years her owners paid £30,907 on insurance of hull and eastward cargo, and recovered from the underwriters £28,782. The insurers also received about £6000 on policies for westward cargoes. The ship returned in gross premiums to the underwriters a profit of £7125 according to this representation. Ten other iron steamers now in existence, and built at a cost of £320,000, are mentioned, and including the Merchant, or 11 vessels in all, the sums paid to underwriters were £188,045, and recovered underclaims £79,025, leaving as the gain to the insurers £109,012. This is the practical experience elicited, in an underwriting point of view, on the losses and gains in the working of 11 iron built steamers in lake navigation. The underwriters say that their earnings do not correspond with the risks undertaken, and the shipowners declare that, if they had been their own insurers, they might have added five new ships to their fleet. The underwriters, on the other hand, draw a distinction between premiums on ships and premiums on cargo, and say that, taking the premiums on the vessels and freight money only, the consideration is too small, and that further protection is needed. other hand, draw a distinction between pre-

iron ships, it is said, have been found out, and Shipowners, it would seem, take the premium

Steel Belting .- Dr. William Fields, of Wilmington, Del., has applied for a patent for steel belting. The Wilmington Republican says: "Any good tough steel will answer the purpose. The great superiority of steel belting over that of leather is first its cheapness, not costing by one-third as much as that of leather; second, it will not stretch or get out of shape third, it is quickly made, as there is an inexhaustible supply of the crude material in this country. Steel can be made at two and a-half cents per pound, and rolled into belting for two and a-half cents more. It don't require to be more than a sixteenth of an inch in thickness for most of the belting, consequently it will not weigh much per foot. The Doctor's process for slackening and tightening the belts and Steel.

LEVI R. GREENE, Trustee, in a few seconds, without disturbing the joinand facings now in use. The invention is an important one, and calculated to be of great service to manufacturers

Some days ago, Messrs. John H. Thompson & Co., of 32 Pine street, New York, sent 100 tons of pig iron by rall to Virginia City, Nevada. As the cost of freight is said to have been about double the value of the fron at the time of shipment, this shipment may be regarded as one of the curiosities of the iron movement.



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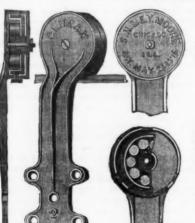
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The wheel is acted upon directly by the rsil. The hub of this wheel revolves within chilled iron rollers. The difference between the diameter of the wheel and the diameter of the hub gives the leverage gained. The hanger has the advantage of this leverage in addition to that obtained from the use of auti-friction roller bearings, and in this respect, as well as in others apparent on examination, is superior to any yet offered to the trade. It requires no oiling.

IT COMBINES SIMPLICITY, EASE OF ACTION, STRENGTH, DURABILITY, BEAUTY OF DESIGN.

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And the trade generally. Hartford, Conn. Dayton, O

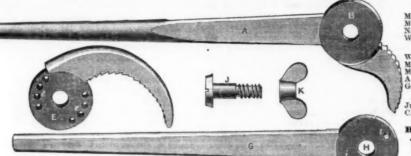


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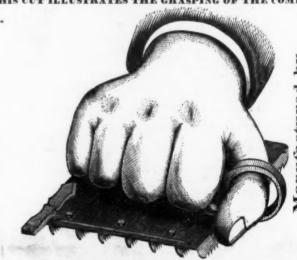
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These recent improvements in combination with the nut inside the ferrule firmly screwed up flush, against square, solld bearings (that cannot be forced out of place by use), verifies our claim that we are manufacturing the strongest Wrench in the market.

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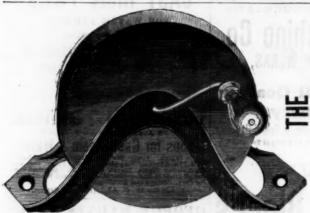
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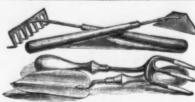


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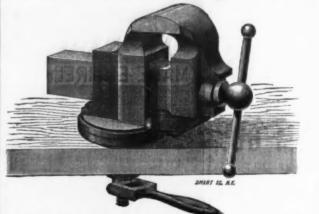
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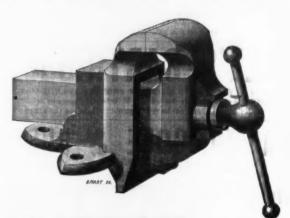
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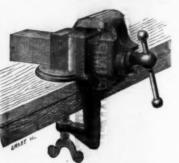




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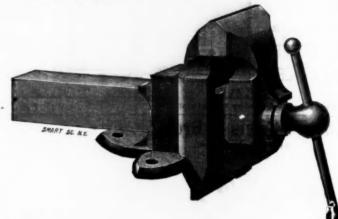
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The Screw being used merely to give the grip, they will outwear any Vises in market.



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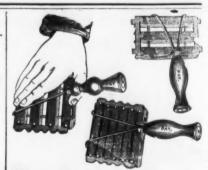
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Tiebou W. J. 28 tearl N. Y. British Manufacturer or, Band Manufacturer or, Band Manufacturer or, Baltimore Bell and Brass Works, 58 and 58 Holifday, Baltimore Md. Benedict & Vose 99 Chambers, N. Y. Davol John & Sons, 190 John, N. Y. Holmes, Booth & Havdens, 49 Chambers, N. Y. Holmes, Booth & Havdens, 49 Chambers, N. Y. Hickcov Mfx, Co., 230 Pearl, N. Y. Manhattan Brass Co., 38 Reade, N. Y. Miller Edw. & Co., 4 Warren, N. Y. Plume & Atwood Mfx, Co., 50 Chambers, N. Y. Becytli Mfx, Co., 421 Broome, N. Y. The Wilmot Mfx, Co., 50 Barclay, N. Y. and 96 John, Bridgepor, Conn. Wateroure Brass Co., 22 Beekman, N. 1. Brick Pressess, Mukers of Carnell F. L. & D. E., 1844 Germantown Ave., Phis., 2. Carnell F. L. & D. E., 1844 Germantown Ave., Phis., 2.
Bridgepor , Conn. Waterpury Brass Co. 22 Beekman N. 1 Brick Presses. Makers of Carnell F. L. & D. R., 184s Germantown Ave., Phila. 2 Bridge Builders.
Moselly Iron Bridge and Roof Co. 5 Dey, N. Y. Leighton Bridge and Iron Works Rochester, N. Y. 1 Brushes (Wheel.) Prester P. M., 117 John, N. Y. Butcher and Shee Knives, Manufacturers of.
Wilson Jonn. Shemeiu. England
Semple, Birge & Co., St. LO'la, Mo
Smith H. D. & Co., Fiantsville Ct. Car Wheels, etc., Manufacturers of, Taylor Iron Works, High Bridge, N. J. Casters. (Furniture.) Toler John, Sons & Co., Newark, N. J
Chemica: and Favsacat thetp ments. Hall & Harbeson, 191 Greenwich, N. Y. Chisels, Manufacturer of, Buck Bros. Milloury, Mass. Conf. Minera of.
The Wilmot M'g. Co. 50 Barclay, N. Y. and 96 John, Bridgepor, Conn. Waterbury Brass Co. 22 Beekman N. 1 Brick Presses, Makers of Carnell F. L. & D. R. 1848 Germantown Ave., Phila. 2 Bridge Builders, Makers of Carnell F. L. & D. R. 1848 Germantown Ave., Phila. 2 Bridge Builders, and Roof Co. 5 Dey, N. Y. Leishion Bridge and Iron Works Rochester, N. Y. 1 Prester P. M., 17 John, N. Y. 1 Brichers and She Bisters, Manufacturers of Wilson John Sheffleid, England. Buichers Minchinery. Forschaer Chas., 41 Rivington, N. Y. 2 Butts and Hinger. American Spiral Spring Butt Co. 22 Beekman, N. Y. 3 Semble, Birge & Co., 54 Lovis, Mo. 3 Union Mig. Co., 38 Chambers, N. Y. 2 Carriage Holis. Makers of Co., 10 Control of Co., 10
Coal Hods, Manufacturers of, Easterbrook Wm., 31 Sherry, Phila. Jewett John C. & Sons, Buffalo, N. Y. Coffee and Spice Mills. Lane Brothers, Millbrook, N. Y.
Enterprise Mg. Co., Philadelphia, Pa. Compasses and Dividers, Manafacturers of Bemis & Call Hardw. & Tool Co., Springfield, Mass. Compound. Hornboatel Chas., 56 Br. adway, N. V.
Nignois G. H. & Co., W Maideo Labe, N. Y. Cooper's Tools, etc., Dealers in, D. R. Barton Tool Co., Rochester, N. Y. Littic Chas. E. 59 Fulton N. Y. Corn Huskers.
Chambers & Quinian, Decaser, 111. Corrugated from . Moseley Iron Bridge and Roof Co., 5 Dey, N. Y Cotton Gin Feeders. Manufacturers of The Brown Cotton Gin Co., New London, Conn
Ornecibles, Manufacturers of. Strow, Wile & Co., 70 Marke, Phila. Greene Levi R., Boston, Mass. Curry Comba. Manufacturers of.
Cassell I. N., Fredericktown, O Futer Brothers. 39 Chambers St., N. Y. Hotchkiss' Sons, Bridgeport, Conn Lawrence Curry Comb Co., 382 32 Avenue, N. Y. Cutlery, Importers of.
Clatworthy F. & W. & Chambers, N. Y. Siaher Jos. S. 411 Commerce, Phila. Friedmann & Lauterlung, it Warren, N. Y. King, Brizga & Co., 80 Chambers, N. Y.
Enterprise Mig. Co., Fulladeiphia, Pa. Compasses and Dividers, Manayfocturers of Bemis & Call Hardw. & Tool Co., Springfield, Mass. J Compound. Horocotel, Marchael Co., Springfield, Mass. J Compound. Horocotel, Marchael Co., Springfield, Mass. J Compound. Horocotel, Marchael Co., Springfield, Mass. J Compound. D. R. Barton Tool Co., Rochester, N. Y. Little Chas. E. Sp Fulton N. Y. Cors Huskers. Chambers & Quinlan, Decatur, III. Corrugated Fron. Moseley Iron Bridge and Roof Co., 5 Dey, N. Y. Catton Gin Feeders. Manufacturers of The Brown Cotton Gin Co., New Lonace, Conn. J The Brown Cotton Gin Co., New Lonace, Conn. Strow Wile of Palv village. Greene Levi B., Boston, Mass. Greene Levi B., Boston, Mass. Greene Levi B., Boston, Mass. Greene Levi B., Manufacturers of. Cassell I. N., Fredericktown, O. Futter Brothers. Sp Chambers St., N. Y. Hotchkiss' Sons, Bridseport, Conn. Lawrence Curry Comb Co., Sp 2a Avenue, N. Y. Cutlery, Importers of. Boker Hermana & Co., 101 Dnane, N. Y. Ciatworthy F. & W., & Chambers, N. Y. Friedmanner, & Co., St Chambers, N. Y. Marz Franauel, 108 Chambers, N. Y. Rozers & Bro., 203 Eroadway, N. Y. Ward Asline, 101 Dnane, N. Y. Rozers & Bro., 203 Eroadway, N. Y. Ward Asline, 101 Dnane, N. Y. Miller Bros. Cullery Co., & Chambers, N. Y. Miller Bros. Cullery Co
Lamson & Goodnow Mfg. Co 55 Chambers, N. Y Meriden Cutlery Co. 49 Chambers, N. Y Miller Bros. Cutlers Co W. Meriden, Conn. Naugatuck Cutlery Co., 89 Chambers, N. Y. New York Knife Co., Walden, N. F.
New York Knife Co., Walden, N. 7 Dag Magzles, Mersereau J. & W. T., & Diane, N. Y. Der Atarm, Makersor Der Atarm, Makersor Bear and Gate Spr. s
Door and Gate Spr. F. Blakemore, 34th Market, Philadelphra Door and Gate Spr. Quackenbush, & France, Co., 29 Reade, N. V. Quackenbush, & Williams, SB Beekman, N. Y. Wan Magaba, Makera of Oramental Wood Co., Bridgeport, Conn. The Parker & Whinine Go., 31 Chambers, N. Y. Drawing Instr. 1992. 14 The Hartford Curve Scribe Co., 23t Isro-dway, N. Y. Dredging, and Makera of Dredging Machines, Am. Dredging Co., 11 S. Delaware ave., Phila. Drill Chackes. 31 mathetisers of. Frasse & Co., 5: Chath m. N. Y. Lambertville 1901 works, Lambertville, N. J. Drilling Machines. Makera of, Thorae, Dellaven & Co., Philadelphin. Drop Forgings Billings & Scencer Co., Hartford, Conn. Boker Hee Mackey Of, 11 and His Dusne, N. Y. Hannel & Fedelan Co., Dabbury, Conn. Lie Tools. Makera of, The D. B. Barton Tool Co., Rochester, N. Y. The D. B. Barton Tool Co., Rochester, N. Y.
The Hartford Curve Scribe Co. 234 for dway, N. Y., Dredging, and Makers of Deciging Machines, Am. Dredging Co. 118, Delaware ave., Phila Dritt Chucks. Manufacturers of.
Frasse & Co., S. Chairlin, N. J. Lambertville ron Works, Lambertville, N. J. Drilling Machines. Makern of. Thorne, Delayen & Co., Phuadelphin
Boker Hermann & Co., 101 and 103 Duane, N. Y. Hammond H. & Co., Hartf-r-I. Conn. The Hull & Seiden Co., Danburr, Conn. Belge Tools. Makers of. The Diff. Barton Tool Co., Bochester, N. Y.
The Hull & reight Co., Danbury, Conb. Edge Tools. Makers or. The D. It. Barton Tool Co., Bochester, N. Y., Weed N., 4 and 6 Gold. N. Y., Electric Mach bires. Hochhausen W., 13 William, N. Y. Elevators. Makers O., Chicago, III. Holake Machine Co., 273 Cherry, N. Y., Whittier Machine Co., 1176 Tremont, Boston, Mass.
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The Onion Stone Co., a Exchange, Boston. Emery Chen. Co., a Exchange, Roston. Emery Wheels. Maker of. Brady Mig. Co., 240 Flymouth. Brooklyd. N. Y. The Union Stone Co. a Exchange, Boston. Ennumeled Fintes. Lefterts Enamel Works, 417 W. 24, N. Y. Engineers, Machinists. etc. Henshall James, 1056 Beach, Phila Moore James cor. 18th and Buttonwood. Phila. Old & Hauschild, 57 to 64 Passic ave., E. Newark, N. J. Engines. Signal & Bro., Kensington, Phila. Ervien Chas. & Bro., Kensington, Phila. Ervien Chas. & Bro., Co., 128 South 4th. Phila. Payre B. W. & Sons. Corang, N. Y. Shanley & Wells, Singhamton, N. Y. Engravers. Collins, Geo. B. 19 Wa-ren, N. Y.
Onl & Hauschild, 57 to St Fassate Ave., E. Newark, N. J. Envines. Straus. Makers or. Ervien Chas. W. & Bro., Kensington, Phils Hartford Foundry and Machine Co., Hartford Ct
Lovegrove & Co., 121 South 4th, Phills Payne B. W. & Sons, Corning, N. Y. Shapley & Wells, Singhamton, N. Y. Engravers. Collins, Geo. B. 10 Wa-ren, N. Y. Swinton A., 722 Chostaut, Phil.
Swinton A., 722 Chostaut, Pull.

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Francets, Self-Measuring, Makers of,	Le B
Carr J, & Riley 83 John, N. Y	Le S
Sanderson Bros. & Co., 16 Chit. N. I	D H
Spear e. Jackson. 39 Chambers, N. Y	DR
Disston Henry & Sons, Phlia	Me
Hiscox Fite Mfg Co., West Cheimsford, Mass	FHP
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Hall A. & Sons. Perts Ambov, N. J. 24 Hall A. & Sons. Buffalo, N. Y. 24 Maurer Henry, 418 East 23d, N. Y. 24	Ma
Rreischer H.& Son. 88 Goerck. N. 1 Newkumet Philip, 28d and Vine, Phila Newton & Co. Albany, N. Y Vaientine M. D. & Bro. Woodbridge, N. J. 24	M
warson John R. Perth Amboy, N. J	MI
Finitand Emery Paper and Cloth. Bac.icr. Adamson & Co. 730 Market, Phila	ME
Flut Clenners. Makers of The Chaimers Spence Co., foot of E. 9th, N. Y, 32 Fluting Machines.	M
Fluc Cleaners. Makers of The Chaimers Senec Co., foot of E. 9th, N. Y	M:
Founders and Machiniars, Sami. J. Cressweil Jr., 812 Race, Phila., Pa	CEC
Paxson J. W. & Co., 514 Beach, Philis. 4 Whitehead Bros., 517 W. 15th, N. Y. 4	OFE
Patterson J. M., Woodbury, N. J	-
Lefferts Marshall Jr., 90 Beekman, N. Y	M
Governors. Junius Judson & Son. Rochester, N. Y	108
Vanderbit Geo., foot W. 19, N. Y 4 Grain Cradles and Snaths.	M
Parker Gilbert, 225 Market, N. J	30
Schowarling & Dela W. Character Way, N. Y.	M
Windmuller Louis & Roelker, 20 Reade N. V. 16 Windmuller Louis & Roelker, 20 Reade N. V. 16 Recland F. L. (Dubon): 70 Wall, N. Y. 28 Lann & Rand Power Lo. 21 Park Row, N. Y. 28 Haussers, etc., Manufacturers or, Emmet Hammer Co., Brooklyn, E. D. N. Y. 18 Haussers, etc., Manufacturers or, Emmet Hammer Co., Brooklyn, E. D. N. Y. 18 Hausson Handle Co., 79 Heade, N. Y. 5 Greensboro Handle Works, 108 Chambers, N. Y. 28 Semple, birge & Co., 52, Louis, Mo. 31 Pardware Commission Merchants. David Sullivan, Montreat, Canada. 24 Granam & Hames, 113 Chambers, N. Y. 31 Feck G. Webster, 110 Chambers, N. Y. 32 Wilson, Juster & Rasker, St Chambers, -Y. 8 Wilson, Juster & Rasker, St Chambers, -Y. 8 Wilson, Juster & Rasker, St Chambers, -Y. 20 Hardware Bealers, 118 Beckman N. Y. 20 Hardware Bealers, 1	M
HRIBINGERS etc., Manufacturers of, Emmet Hammer Co., Brooklyn. E. D., N. Y	[98 N
Hn adle - Makers of N. Carolina Handle Co., 79 Reade, N. Y	
Semple, Birge & Co., St. Louis, Mo., 31 Hardware Commis-stor Merchants, David Sullivan, Montreat, Canada, Co., Co., Co., Co., Co., Co., Co., Co.	
Peck G. Webster, 116 hambers, N. Y. 29 Walsh, Coulter & Flagler, 85 Chambers, Y. 8 Wilson J. Clark & Co. 41 Beekman N. Y. 20	
Betts & Burger, 95 Chambers, N. Y	
Shepara Sidney & Co., Buffalo N. Y. 27 Wilson J. Clark & Co., El Beckman, N. Y. 20 Handwore Importers.	N
Peck G. Webster, 110 'hambers, N. Y. 29 Walsh, Coulter & Flagler, 85 Chambers, Y. 8 Wilson J. Clark & Co. 41 Beekman N. Y. 29 Hardware Bealers. Betts & Burger, 85 Chambers, N. Y. 24 Lloya, Supplee & Walton, 25 Market, Phila. 3. Quackenbush, Townsend & Co. 69 Reade, N. Y. 32 Wilson J. Clark & Co. 21 Block Market, Phila. 3. Quackenbush, Townsend & Co. 69 Reade, N. Y. 32 Wilson, J. Clark & Co. 21 Block Market, Phila. 3. Quackenbush, Townsend & Co. 69 Reade, N. Y. 27 Wilson, J. Clark & Co. 21 Block Market, Phila. 3. Wilson, J. Clark & Co. 161 Duane, N. Y. 27 Hat dware Importers. Boker Hermann & Co. 161 Duane, N. Y. 11 Van wart & McCoy, 134 and 186 Duane, N. Y. 11 Harr.ld F. W. 38 Chambers, N. Y. 11 Windmuller Louis & Roeiker 29 Reade N. Y. 11 Windmuller Louis & Roeiker 29 Reade N. Y. 14 Hardware Manufacturers. Market G. S. Beekman, N. Y. 36 Blake Bros. Hardware Co. 160 Reekman, N. Y. 36 Blake Bros. Hardware Co. 160 Reekman, N. Y. 36 Blake Bros. Hardware Co. 160 Reekman, N. Y. 36 Hardware M. S. 160 Llouis Market, Co. 31 Hardware O. 160 Reade, N. Y. 12 Clark & Co. 31 Breade, N. Y. 12 Clark & Co. 31 Breade, N. Y. 12 Clark & Co. 31 Breade, N. Y. 30 Enterprise Mig. Co. Phila. 30 Hard, Bliven & Messd Mig. Co. 245 Pearl N. Y. 56 Middletows Tool Co. 18 & 20 Cliff, N. Y. 30 Hard, Bliven & Messd Mig. Co. 245 Pearl N. Y. 57 Part Geo. Buffalo, N. Y. 60 Union Mig. Co. 97 Chambers, N. Y. 17 Providence Tool Co. Providence, R. I. 37 Sperry D. R. & Co. 97 Chambers, N. Y. 37 Yan Wagoner & Williams & Beekman, N. Y. 36 Union Mig. Co. 97 Chambers, N. Y. 37 Yan Wagoner & Williams & Beekman, N. Y. 36 Hardware & Co. 161 Kim, N. Y. 34 Hardware & Co. 162 Kim, N. Y. 34 Hardy & Co. 162 Kim, N. Y. 34 Hardy & Co. 163 Kim, N. Y. 35 Hardware & Co. 548 Broadway, N. Y. 49 Grane Bros. Mig. Co. C. Chicago, III Oils Bros. & Co. 548 Broadway, N. Y. 49 Granbers & Quillan, Decatar, III. Herse Nulls, Makers of	-
Windmuller Louis & Roelker 20 Reade N. Y 16 Hardware Manufacturers, American Solral Spring But Co 83 Beekman, N. Y36	
Blake Bros. Hardware Co., New Haven, Conn 10 Barnett Oscar, Newark N. J 4 Biglin Philip S., 98 Reade, N. Y 12 Clark & Co., Buffalo, N. Y 12	6
Cowles Hardware Co., Unionville, Ct. 89 Enterprise Mfg. Co., Phila. 89 Hart. Bliven & Mead Mfg. Co. 348 Pearl N. Y. 8	0
Miller's Falls Mfg. Co., 74 Chamoers, N. Y. 21 Parr Geo., Buffalo, N. Y. 27 Pratt & Co., Buffalo, N. Y. 27	0
Providence Tool Co., Providence, B. 1. 18 Sperry D. B. & Co., Batavis, III	P
Van Wagoner & Williams & Beekman, N. Y	P
Carver John, 288 Monroe, N. T. 5 Felder Chas., 99 Thomas, N. Y	P
Hurdy & Co., 102 Fim. N. Y. 24 Jessup & Sterilaz. 7 and 9 Ulff. N. Y. 4 Langdon Mitre Box Co., Millers Falls, Mass. 5	1
Semple, Birge & Co., St. Louis, Mo	
Crane Bros. Mfg. Co. Chleago, III	P
Chambers & Quinian, Decatur, II! 8 Horse Nails, Makers of, Anaable Horse Nail Co. 38 Chambers, N. Y	
Otts Bros. & Co. Jss Broadway. N. Y. 9 Hog Rivage Oulnian, Decatur, III. 8 House Oulnian, Ouln	1
Boston Rolling Mills, 17 Batterymarch, Boston. 4 Burden fron Works. Troy, N. Y. Rhode Island Horse Shoe Co., Providence, K. I., . 3 Robose berger, & Co., Pittsburgh, Pa	
Hydraulic Jacks, Dudgeon Richard. 24 Columbia. N. Y	E
Holden E. J. & Co., 54 Beekman, N. Y. Ice Cream Freezers, Blatchley C. G., 506 Commerce, Phils.	F
Hartford Steam Boller Inspection and Insurance Co35 Iron Brokers. Boynton Geo. A 20 Wall, N. Y	
Harford Steam Soiler Inspection and Insurance Co35 From Brokers	,
Iron Bridges. Leighton Bridge and Iron Works, Rochester, N. Y., 10 Iron. Charconi, Warm or Cold Blast,	,
Quincy John W. 98 William, N. Y. 4 From Commission Merchants. Brown T. Horace, 265% Walnut, Phila	
Spooner & Collins, St. Lonis, Mo	*
From Plus, Manufacturers of Parrott Peter P., Greenwood Fee., Orange co., N. Y. 4 Iron theaters. Abeel Brothers. 190 South. N. Y.	1
Bonnell. Hotsford & Co., Youngstown, O.,	1.
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Judson B F. 45; and 459 Water, N. Y. Oguen Wallace, Sp. 65, 59 and 91 Elm, N. Y. Plerson & Co., 24 Broadway, N. Y. Outney & John W. 96 Wullam, N. Y.	,
Reed John H. & Co Brenards D. W. & Co., 92 Mangin St., N. V. Snyder Asa, Richmond, Va	
Wallace Wm. H. & Co., Albany and Washington streets, N. Y. Warner A. B. & Sons, 25 and 29 West, N. Y.	1
Williamson James & Co., on Wall, N. Y. Whitney A. R. & Bro. 58 Hudson N. Y. Irou, Manufacturers of. Bradley, Reis & Co., 22 Cliff, N. Y.	1
Burden Iron Works, Troy, N. Y. Cleveland Rolling Mill Co., Cleveland, O	1
Everson, Macrum & Co., Pittsburgh, Pa. 4 J. & J. Rogers Iron Co., Ausable Forks, N. Y 5 Leonard John, 489 & 461 West st. N. Y 5	
Williamson James & Co. S wall, N. Y iron Play, Manufocisisers of Parrott Peter P., Greenwood Fee, Orange co., N. Y. 4 Iron Pieriers. Bonneil. Hotsford & Co., Youngstown, O. B. Borden & Lovell, D. and Tl West, N. Y. Brady Matthew, 4 Bridge, Brooklyn, N. Y. Cleveland, Brown & Co., Cleveland, O. 6. Cooney Daniel F. 83 Wasnington, N. Y. Huerstell. G. 99 Martet Slip, N. Y. Y. Fuller, Lord & Co., Life Greenwich, N. Y. Greenwich, N. Y. G. Hurrsten & G. Holoon, J. B. G. Holoon, J. G. Harrison & G. Holoon, J. B. G. Holoon, J. G. Harrison & G. Holoon, J. B. G. Holoon, J. G. Harrison & G. Holoon, J. B. Harrison, N. Y. G. Harrison & G. G. H. Broadway, N. Y. G. Harrison & C. G., 24 Broadway, N. Y. G. Holoon, J. G. H. G. G. G. H. G. G. G. H. & Co., J. Manuy and Washington streets, N. Y. G. G. G. G. G. H. & Co., 24 Cliff, N. Y. G. Wallace Wm. H. & Co., 24 Cliff, N. Y. G. G. G. H. G. G. G. H. G.	1
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Ocks. Manufacturers of	Se M
D. L. Miller Lock Co., 132 Cherry, Philadelphia. Romer & Co. Newark N. J. Union Nut Co., 28 Beckman, N. Y. 18 Yale Lock Mfg. Co., 288 Broadway, N. Y. 22	Sh
achinery, Makers of. Bliss & Williams, 167 Pivmouth. Brooklyp	Sk
Yale Lock Mfg. Co., 296 Broadway, N. Y. 28 Inchinery. Makers of, Bliss & Williams, 167 Fivmouth. Brooklyp. 82 Forsatin S. C. & Co., Manchester, N. B. 34 Hendey Machine Co. Wolcottaville, Ct. 34 Frant & Whiter Co., Hartford, Conn. 34 Sellers Wm. & Co., 1600 Hamilton Phila, Fra. 32 Fran, C. A. & W. L. 4116 Ludlow, Phila, Fra. 32 Fran, C. A. & W. L. 4116 Ludlow, Phila, Fra. 32 Wetnerll Kobines Co., Danburr, Conn. 35 Wetnerll Kobines Co., Banburr, Conn. 35 Wetnerll Kobines Co., Banburr, Conn. 36 Boone W. C. 18 Humbo'dt, Brooklyn, E. D. 12 Lorerux C. 93 Elizabeth, N. Y. 12 Lyon & Fellows Mfg. Co., Williamsburg, N. Y. 12 Lyon & Fellows Mfg. Co., Williamsburg, N. Y. 12 Lenchiuses, Tools, Makers of, 13	BRIDE
Retheril Robert & Co., Chester, Pa	Bus
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Inchinists' Tools, Makers Of. Blaindell P. & Co. Norcester Mass. 34 Raiser Louis, 125 Worth, N. Y. 11 Van Haagen C. & Co., Philin, Fa. 55 tchinists 15	50
Hardman James Jr., 7i John, N. Y	Sp
Intch Safe. Evans Price, 688 Green wich, N. Y	Sq.
Inliers. N. Y. Handle & Mallet Works. 436 E. Houston 81 Langunese.	-
Pyroluste Manganese Co., 214 Pearl, N. Y	-
Fuller, Dana & Fitz, Boston, Mass	30
Pheips, Dodge & Co., Ulff., bet. John & Fulton, N. 1. 2 Purves A. & Son, cor. South and Penn, Phila	81
Wallace & Humphrey, 118 Walnut, Phila	
Baidwin B. W., Pittsburgh, Pa	1
hayes G., 718th ave	
Murray Iron Works, Burlington, Iowa	1
Hiners' Candles. Makers of James Boyd's Sons. 10 and 12 Franklin, N. Y	
Carter H. 290 Pearl, N. Y	
House Trans. Untchemalive, Makers of. Dietz R. E., 54 and 56 Fulton, N. Y	-
Mairby, Curtiss & Co., 34 Reade, N Y	-
Continental Nickel Plating Works, 47 Ann. N. Y	2 2
Witness to Co. 114 France No. 17 N. 1. 1. 20	
Note Broker.	8
Gallaunet F. W. 3 and 5 Wall, N. Y. Nuis. Hoftis. etc., Makers of, Cark 37%, & Co. Mildaje, Conn Fuiler, Lord & Co., 198 Gireen wich, N. Y. Haskell W. H. & Co., Pawtucket, R. I. Lewis, Ohver & Phillips, Pittsburreh, Pa. 18 Roseberry Geo. D., Pottsville, Pa. Russell, Bridsall & Ward, Port Chester, N. Y. 38 Shetton Co., Birmingham Conn. 33 Stermbergo J. H., Reading, Pa. 58	
Lewis, Oliver & Phillips, Pittsburgh, Pa. 13 Roseberry Geo. D., Pottsville, Pa. 4 Rassell, Birdsall & Ward, Port Chester, N. Y. 36 Shelton Co., Birmingham Conn. 3	T
Union Nut Co. 78 Beekman N. Y	T
American Natural Oil Co., 25 Cedar, N. Y	
Blake Crusher Co., New Haven Ct	T
Pause, (Orlipping na's Berads). Lewis, Daizell & Co., Pittaburgh, Ps	1
Howson & Son, Phita, and Washington, D. C	7
Eaton. Cole & Burnham Co., 58 John. N. Y. 22 McNab & Harlin Mig. Co., 56 John. N. Y. 22 Pancoast & Maule, 227 Pear, Phila. 3	1
Barr Edward, 78 John, N. Y. Leighton Bridge and Iron Works, Rochester, N. Y. id McNeal John & Sons, Burlington, N. J. Warren Foundry & Mach. (b. Phillippenger, N. J. 2016)	1
Wood R. D. & Co., 400 Chesnut, Phila. 22 Plane Irons, Manufacturer of Buck Bros., Milibury, Mass. 11 D. R. Barton Tool Co., Rochester, N. Y. 11	
Middletown Tool Co., 18 & 20 Cliff. N. Y. Plaues. Manufacturers of Ba.ley Wringing Machine Co., 166 Chambers, N. Y., 2 B. R. Barton Tool Co., Rochester, N. Y. Greenfield Tool Co., Greenfield, Mass	1
Borby Silver Co. Derby. Ut. 3. Kogers & Bros. 203 Broadway, N. T. Plews, Chillied Iron. Makers of. South Bend Iron Works, South Bend. Ind. 3. Plantbage.	3
Ing. Pa	9 1
Baitmore Bell and Brass Works, 53 and 55 Holti- day, Baitmore, Md	52
Forsatta S. C. & Co., Manchester, N. H	
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Wild R. W., 30 Cortlandt, N. Y. 2 Pringing Fresses. Relsey & Co., Meriden, Conn	16
Relsey & Co., Meriden, Conn. Pulleys, Friction. Mason Volney W. & Co., Providence, R. I	4
Douglas W. & B., Middletown Conn. Rumsey & Co., Seneca Fails, N. Y. Union Mfz. Co., St. Chambers, N. Y.	1000
Pyrometers. Brown Edward, 3ti Walout, Phila. Raitrond and Mining Tools. Metcaif, Paul & Co., Pittsburgh, Pa	18
Jackson & Tyler Baitimore, Md	6
Metcaff, Paul & Co., Ffitsburgh, Pa	5 6 9 5
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Tryon Edward K. Jr. & Co., Phila	4 31
Moore James, Cor 16th and Buttonwood, Phila	7
Prince's setallic Fails Co., 220 Fearl, N. X. Ruics, Monsfacturer's Chambers, N. Y. Belcher Bros. & Co., 39 Chambers St., Saniev adie and Level Co., 35 Chambers St., Sanie and Smerry Paper, McKers or Beater Admison & Co., 730 Market, Phila.	6
Beader Adamson & Co., 789 Market, Phila. Saws, Makers of, Amorican Saw Co., Trenton, N. J. Atkins E. C. & Co., Indianapolis, Ind. Dission Hearr & Sons, Phila. Poace & Hogan, Williamsburg, N. Y. Sons & Jackson, 89 Champers, N. Y. New Y. Madden & Clemson Mig. Co., Middletown. N. N. Madden & Clemson Mig. Co., Middletown.	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Spear & Jackson, 89 Champers, N. Y. Wheeler, Madden & Clemson, Mig. Co., Middletown, N. Y. Naw France, Wood, Marketon, M. W.	19
wheeler, sanded a Cremson Mrg. Co., supersown. N. Y. Saw Frames. W and. Makers of. Peace Harver W. Williamsborg, N. Y. Seales. Manufacturers of. Sola W. Cliff. N. Y. Rushie Sros. W. A. Sola W. Cliff. N. Y. Rushie Sros. Whater, Phila. Shive Governor Co., Bethlehem, Pa	9
Shive Governor Co., Rethiehem, Pa	14

8	crews. Makers of.	7
	erews. Makers of. Billerback J. & Co., cor. 17th and Venango, Philais Miles F. S., 205 Quarry, Phila	
5	erews, Importers of. Bruce Geo. W., 1 Platt, N. Y	
8	Crew Drivers. (Improved) Makers of. Disston Henry & Sons, Phila	C
7	Vermont Snaths.	
8	eam!e-s Tubes. Makers of	0
8	hovels. &c.	
	Hussey, Binns & Co., Pittsburgh, Pa	
20	hears *cissors &c. Marx Bros., 431 B'way, N. Y	
	kntes.	1
2	Bradford & Anthony, Boston, Mass	
	imertine Works. Binn's Smelling Works. Williamsburgh, N. Y	1
	Hooks Smelting Co., Phila., Pa. 2 Reeves Paul S., 760 South Broad St. Phila	
2	stamped aud Japanned Tip Ware. Shepard Sidney & Co., Buffalo, N. Y	١,
8	Sturges Frank & Co., 72, 74 & 76 Lake, Chicago 3 steam Hammers, etc., Makers 01. Bradley Mfg. Co., Syracuse, N. Y	1
	Dudgeon Richard, 24 Columbia, N. Y	1
2	Stafford Mfg. Co., 66 Fulton, N. Y	1
100		1
	Midaletown Toc1 Co., 18 & 20 Cliff, N. Y.,	ľ
9	Rowland Wm. & Harvey, Frankford, Phila86	
	guares. Steel and Iron, Makers of. Hart. Bilven & Mead Mfg. Co. 248 Pearl, N Y30	1
	Hart. Bilven & Mead Mfg. Co. 248 Pearl, N Y	
	Phil. 22 Carr A. 43 Cortland, N. Y 22 Carr Bros. Mig. Co. Cnicago, III 21 Knowles Steam runn Works, Warren, Mass 34 Valley Machine Co. East Hampton, Mass 28	1
	Knowles Steam Fump Works, Warren, Mass	
	Albany Steam Tran Co., Albany N. V. 24	1
22	Steel Cnatings. Manufacturers of Flagg Stanley G. & Co., 24 & 218 N, 8rd, Phila. 31 Chester Castings Co., Evelina, Phila Pa. 16 Crucible Scel Casting Co., Pitraburgh, Pa. 36 Fitraburgh Steel Casting Co., Pitraburgh, Pa. 36	ı
	Chester Castings Co., Evelina, Phila Pa	
	Pittsburgh Steel Casting Co., Pittsburgh, Pa36	
Í	Pittsburgh Steel Casting Co. Pittsburgh, Pa. 36 Steel Importers. Cart J. & Riley, 82 John, N. Y. Sulzbacher, Hyman, Wolff & Co., 16 Cliff, N. Y. Hobson Francis & Son, 91 John, N. Y. Johns, Meyer & Colver, "heffield, Eng. 22 Moss F. W., 80 John, N. Y. Nicholson, John & Son, 88 Chambers, N. Y. Serons & Co., 24 Broadway, N. Y. Anderson Fros. & Co., 16 Cliff, N. Y. Sanderson Geo, & Co., 57 John, N. Y. Yan Wart & Mecov, 184 and 136 Duane, N. Y. Wardiow S. & C., 95 John, N. Y. Zeref Manufacturers.	1
	Hobson Francis & Son, 97 John, N. Y	1
	Nicholson John & Sons, 88 Chambers, N. Y	-
	anderson Pros. & Co., 16 Cliff, N. Y. 28	1
1	Van Wart & McCov. 134 and 136 Duane, N. Y 28 Wardlow S. & C 95 John, N. Y	1
1	Anderson & Woods Pittsburgh. 29	
	Anderson's Woods Pittsburgh	
	Griswold Jonn A. Co., Troy, N. Y. 29	
١	Lackawanna Iron and Coal Co., Scranton, Pr	1
í	Rowland Wm. & Parkin, Pittsburgh	
l	Singer, Nimick & Co., Pittsburgh, Pa. 29 Singer, Nimick & Co., Pittsburgh 28 The Edgar Thomson Steel Co. 57 Broadway N. 29	
l	Tvis m. Takeman, Taylor & Co., 188 Grand, N. Y80	
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1	Clark & Co.'s. 16t & 16t W. 27th, N. Y	1
1	Steel S amps,	1
1	Rogers Richard H., 45 Ann. N. Y	1
	Sterks and Oles. tolroyd & Co., Waterford, N. Y. tolroyd & Co., Water Gra, & C., Makers of Arustrong & Hutchinson, Allegheny, Pa. Stone Co. ushing Marchines. Blake Crushing Marchines. Blake Crushing Marchines. Blake Crusher Co., New Haven, Ct. Stoves, Markers of Miligan Stove Co., Detroit, Mich. Union Stove Works, 70 Beckman, N. Y. Stove Boards, Mandacumers of.	1
1	Stone Crushing Machines, Pa.	.
1	Mi higan Stove Co., Detroit, Mich.	
1	Union Stove Works, 70 Beekman, N. T	1
1	Stove Boards, Monufacturers of Shoord Sidney & Co. Buffalo N. Y. 27 Straightones and Benders. Scofield C. & Co., Vineland, N. Y. 10	7
	Tin Toys. Fallows Jas & Co. rear St N. and Phila	0
	Twist Drills, Makers of N. Bedford Mass. V. Morne Twist Drill & Mach. Co., N. Bedford Mass. V.	0 1
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	Burr & Co., SI Peck Shp N. V	2
	Tackie Blocks, Makersor, Burr & Co., 31 Peck Slip N. Y Tiebout W. & J., 250 Pearl, N. Y	0 6
	Scofield C. & Co., Vineland, N. Y	2 0 6 0 9 0
	Field A. & Sons. Taunton Mass Grandy & Kenworthy, 165 Greenwich, N. Y. 3 Loring Samuel, Plymouth, Mass. 3	2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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A n v 116. Anerican	Loose Pin Japaned	Dover	9:00dis 10 % # dos \$5:00—ats 20 % # dos \$4:50—ats 20 %	Rolled Plate. Raised. Wrought Strap and T		Bailey's Patent dis 25&10 Auburn Tooi Co.'s dis 25 Greenfield Tool Co. net if
A pple Parers. Ounestic Furn Table	Fast Joint, Narrow	Genuine Chester—Regular Nos. Flour and Fl Washington Mills—Regular Nos	7 m 6c dis 10 € 7 m 4c dis 10 €	Screw Hook and Strap	n. 11c w b {	D. R. Barton Tool Co
Lightning	Loose Joint	Wellington Mills, Gran Flour Enameted and Tinned W		Heavy Welded Hook {	tion from the All of	Sandusky Too' Co
Skeleton Paring, Coring and Slicing	Loose Fig. 10 Acors.				/% in. 11%c)	Pilers and Nippers. Button's Patent. Hull's Panent Nippers. No. 1, \$15; No. 2, \$21 % doz dis \$5. Hull's Panent Nippers. No. 1, \$15; No. 2, \$21 % doz dis \$5. Leach's Patent Wire Cutters per doz \$6. 59—dis 15. Gas Pilers dis \$5.
Ash Sifter dis 10 % J. E. Corning's Barrel Head. dis 10 % Rival. w doz \$1270 net Boure. per doz \$270 dis 30 %	Union Mfg, Co.'s Fancy Butts.— Figured Enameied Loose Joint	Kscutcheons. Door Lock	discounts as Door Locksdis 60&10 %	Riveted Eye	# doz 5 00—dis 30 % dis 25 % dis 15 @ 20 %	Gas Fliers and Nippers dis 25 Eureka Pilers and Nippers dis 25 Flumbs and Levels. Stanley R. & L. Co.'s Pat. Adjustable. dis 60&10
Resung. Union. Skeleton Paring, Coring and Sileing \$3 00 \(\psi\) doz net Bay State, Paring, Coring and Sileing \$12 00 \(\psi\) doz. net Climax Sileer 80 0 Ash Siftera 48 10 A Corning's Barrel Head 48 10 Squire per doz \$2700 net Squire per doz \$2700 net Squire per doz \$2700 dis 20 \(\psi\) Conn. Valley Mig. Co	Figured Enameted Loose Joint.	Faucets. Fenn's. " Cork Stops. Star. Frary's Patent Petroleum. Wood and Mctailic	dis 50 \$	Planters Scovill Pattern Lane's C. S. Cresent, Amei Hooks, Bird Cage.	rican Patterndis 5 %	Eureka Pilers and Nippers. dis 25: Plumbs and Levels. Stanicy R. & L. Co.'s Pat. Adjustable. dis 60&10 Non-Adjustable. dis 60&10 Standard Ruic Co.'s New Adjustable. dis 60&10 Standard Ruic Co.'s New Adjustable. dis 60&10 Pocket Ruic Co.'s Non-adjustable. dis 60&10 Johnson's Patent Adjustable. dis 60&10 Davis Patent Pulleys. dis 60&10 Pulleys.
dia 40 v 10 %	" 1t. Narrow dis 30de 5 9 1 1t. Narrow dis 30de 5 9 1 1t. Narrow dis 30de 5 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Star. Frary's Patent Petroleum Wood and Metallic Wood, Cotk Laned.	dis 55&10 \$dis 15&10 \$dis 40 \$dis 65&10 \$	Bird Cage Cotton	dis 60&10 @ 70&10 % dis 50 % dis 60&10 % dis 60&10 %	Pocket Levels
Cook's	Table But's, Back Fiaps, &C	Wood and Mctalife Wood, Cotk Laned Enterprise Mig. Co., Self-Measu Fellow Plates. Files. American File Co	ringdis 20 % # 15c; dis 25&10 %	Weston's No. 1, \$8' McGill's. Skinner's	00; No. 2, \$7.00 per doz net 	Davis Patent dis 60 & 10 Palitys Judd's Axie per dox \$0.75 dis 40 Hot House and Tackie dis 60 & 10 Jap'd Screw dis 60 & 10 Jap'd Screw dis 60 & 10 Jap'd Screw dis 60 & 10 Jap'd Side
Lewis Single Twist Bits	Loose Pin. Wrt	Arcade File Works. Auburn File Works. Nicholson	\$5 00 to £ currency \$5 00 to £ currency new list, Jan. 1. 1875, net	" Sargent's list." Sargent's list. " Reading list. (Hart's list	dis 6 & 10 £ 5 & 10 % dis 60 & 10 & 10 % dis 85 & 10 % dis 85 & 10 %	Jap'd Side. dis 60&10 9 " Clothes Line
Diamond Hardware Co. dis 40 c	Paimer dis 40 s Seymour dis 55&10 g	Areade File Works. Aduura File Works. Aduura File Works. Nehoison. C. B. Fauli's Eelier & Bros Johnson & Mg. Co. \$5 Uhonson & Bro	\$5 00 to £ currency \$5 00 to £ currency \$5 00 to £ currency	Harless. Sargent's list Reading list Cont and Hat, Hart's list	dia 60&5&10 \$dia 85&10 \$dia 80&10&10 \$dia 60&10&10 \$	Panssa per doz 34 50 @ 5 00, dis 10 7 Panssa pouglas Cistern, etc. new list dis 25 7 Union Mfg. Co's. Cistern and Pitcher. dis 25 9 Rams dis 20 8
Hollow Augers, Douglass'	Seymour dis 65e10 \$ Shepard dis 65e10 \$ Lull & Porter dis 60 \$ Nicholson dis 45e10 \$ Huffer dis 33/4e10 \$ Garrerson No. 1 dis 65 \$ Clark & Nos. 1, \$ and \$ dis 65 \$ Clark & Nos. 1, \$ and \$ dis 65 \$ Chark & Nos. 1, \$ and \$ dis 65 \$	Western" Rothery's Jowitt's L& Riley Carr	\$5 00 to £ net \$5 00 to £ currency 4 50 to £ gold	Outon Bench—Hotchkiss' \$5.00 % Bench—Hotchkiss' \$5.00 % Weston's No. 1, \$6' Weston's No. 1, \$6' McGill's. Skinner's. Sargent's list. Celling. Haraess, Sargent's list. Coat and Hat, Harr's list. "Reading list. Sargent's list. Wire Screw Hooka and Kyes. Grass.	and Staplesdis 75 % at	" Rams dis 20 ; Punches Garden Engines dis 10 ; Punches Day of the Punches des 20 ;
Hollow Augers, Douglass*	" Clark's No. &	Rothery's Jowitts Jowi		Whiffletree—Patent. Hooks and Eyes—Maileable	**************************************	Acada s t atcut
Cimlet Bits—Screw, 第7:50: no screw, \$9. dis 20:819 x Double Cut Gimlet Bits, Shepardson's. dis 20:819 x Ct. Valley Mfg. Co. dis 30:810 x Hartwell's. dis 20:810 x Douglass' dis 20:810 x	Can Openers. Messenger's Comet. Messenger's	Spear & Jackson s	5 00 to £ gold 5 25 to £ gold 5 00 to £ gold	Horse Nails. Ausable	6 7 8 9 10 0c 27c 25c 24c 28c 28c	Bemis' dis 20 t Raii Sliding Door, Wrought Brass
" Douglass' dis 25&104 Ives Vs dis 30 % Morse's Bit Stock Drills, List of Jan'y 1, 76 dis 25 % L'hommedieu's Ship Angers dis 20 %	No. 5, Iron Handle	Turton Bros. & Matthews Fisher s. Moss & Gamble Thos. Turner & Co. (Peter A. Fr	4 75 to £ gold 4 75 to £ gold 4 75 to £ gold 4 75 to £ gold	Ausable 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1c 28c 26c 25c 24c 28c 1c 28c 26c 26c 26c 22c 21c 1c 28c 26c 26c 25c 24c 28c 1c 28c 26c 25c 24c 28c 26c 26c 26c 26c 26c 26c 26c 26c 26c 26	Hakes Cast Steel .
Watrous Ship Augres	Sardine Scissorsper dos \$7.00 dis 40 % CapsPercussion, per 1000.	"Phile Sheffield," P. T. Co Limet & Co. (French).		Globe, P't'd & Pol'd 3 National, Pointed and Polished, Pat. Fin 3 National, Pointed and	9c 25c 25c 24c 21c 20c	Cast Steel
Normedieu's Ship Augers	Capss—Percussion, per 1000.	" Pony., 4 in ., \$4'55; 5 in, \$5;	6 in. 5.50; î in. \$6 dis 25 4	Persin's P't'd-Black. " 29	e 25e 23c 27c 21c 20c	Razor Straps. Evan's
"Shouldered Peg. per gross 7'20-dis 10 % "Patent Peg. per gross '39-dis 15 % "Shouldered Brad per gross 2'25-dis 15 % Brad Setz. Aikun's per dos 813'38-dis 40 %	U tion	W		Letwins, Lounted and	0c 26c 24c 29c 2/c 21c 1c 26c 24c 29c 2/c 21c 2c 28c 26c 27c 27c 29c 29c 2c 28c 26c 27c 29c 29c	Razor Straps.
"Best. per gross \$1*60—het "Shouldered Feg. per gross \$2:5—dis 10 \$ "Patent Feg. per gross \$2:5—dis 15 \$ Shouldered Brad. per gross \$2:5—dis 15 \$ Brad Sets, Aiken 8. per gross \$2:5—dis 15 \$ Brad Sets, Aiken 8. per gross \$15:30—dis 40 \$ "Clark 8. Stanley's Excelsior. \$15 \$20—dis 30-810 \$ "Stanley's Excelsior. \$15 \$20—dis 30-810 \$	Cartridges Metallic	Improved Knox (Climax), 4 inch	3 75 each net 5 00 each net 6 00 each net	Vulcan, P't'd & Blued. " Si Star Brand, 18c.; Morgan P'utnam Ausable. National and New I Perkins' and Vulcan Perkins', Vulcan and Globe	10:00 lbs., dis 5 %	Inon and Witness t
Axes. Brooks. per doz \$12 00 @ 14 00 net 8100d's. per doz \$12 00 @ 14 00 net 8100d's. D. R. Barton Tool Co. per doz \$13 00 @ 16 00 set 912 00 net 912 50 @ 16 00 get 912 50 get	Wool	Empire . No. 1, 7-inch Roll	5 00 each net 4 00 each net 6 75 each net 5 00 each net	Perkins' and Vulcan. Perkins', Vulcan and Globe. Herse thoes.		To and rinned
Collins' — \$\psi \ \alpha \ \text{doz} \ \text{10 (0) at \$12 \ \text{00} \ \text{not} \ \text{5.5} \\ H. Clark's (J. C. W. & Co.) \text{bron'd or red. \$\psi} \ \text{doz} \ \text{510 (0) at } \\ Hurd's Razor Blade — \$\psi \ \text{doz} \ \text{11 (0) @ 12 (0)}	Cast Fon, Steel Points. per dos 24 vals Cast Fra. dis 30±10 € 40 ≴ Jed. dis 30±10 € 40 ≴ Plate and Shallow Socket. dis 40 € 6 Deep Socket. dis 40 €	4 inch rolls Empire No. 2. S-inch Roll Defiance 4 in, \$3.00; \$6 in., \$3.00; \$6 in., \$3.00; \$6 in., \$6.00; \$6.0	100; 8 in., \$6.50 each net 	Horse Shoes. Buden R. I. Horse Shoe Co., Perkin R. I. Pa Mule Shoes Perkins' Snow.	# Reg. \$4 02% # Reg. 4 87% attern	Road and Levee Scrapers. dis 25 Roads
Simmons' # doz 1: 00 @ 1: 50 Morris' # doz 1: 50 @ 13 % tod Jacket # doz 1: 50 @ 12 50 tod Jacket # doz 1: 50 @ 14 %	Deep Socket. dis 40 % dis 4	Crown 4% in. Roll, \$5.75; 6 in Domestic Fluter		Perkins' Snow	# keg, 5'87% per keg \$5'00 dade# B 80	Rollers
Morris 9 dox 17 for \$\tilde{a}\$ 18 dox 17 for \$\tilde{a}\$ 18 dox 18 for \$\tilde{a}\$ 18 dox 18 for \$\tilde{a}\$ 12 50 bband shorter 9 dox 12 50 \$\tilde{a}\$ 14 dox 18 for \$\tilde{a}\$ 12 50 bband shorter 9 dox 12 50 \$\tilde{a}\$ 14 dox 10 \$\tilde{a}\$ 20 \$\t	Humason, Beckley & Co.'s. dis 60&10 % Sargent's dis 60&10 % Chain net gold	Forges. 'Empire" (W. P. Kellogg & Co.) Keystone Portable Forge Co	dis 20 %	American Ice Chisel National "Novelty Ice Breakers	per doz \$6.50 net per doz \$6.50, dis 10 s per doz \$6.50, net	Manuacturers' List of May 19, 1976 Manila
John Leverott* .	Ohast	Hay, Manure & Spading Plated A 1 Reed & Barton		Uniap s Ring Picks. Wood Head Picks, Sargent's	per doz \$3'00, dis 2'\$ per doz \$1'85, dis 60&10 \$ per doz \$1'85, dis 60&10 \$	Manila Tar'd Rope
Axles. Common (Guy C. Hotchkiss, Field & Co.)	Trace. 7-10-2. by the case, w pair gold. 35 a set German Halter Chain. dis 25 % gold German Coll. dis 25 % gold Galvanized Punip Chain. w 30 10% dis 11c.	Burnished, P. S. & W., new list. # doz\$300 875 425 475 No 0 1 2 8	5-25 6-00 7-0c 8-00 9-00 4 5 6 7 8	ice Mallets, Pick in Head Pick in Handle iee Axes, Small, Cast or Mal	per doz \$1.75 net per doz \$3.00 net leableper doz \$1.50 net	Sisal
Light of Common	Chalk.	Gauges. Marking Star. Wire. " Smith's Patent	dis 45&10 % dis 85 % dis 10 %	Brass Enameled Knives. Ames' Butcher Knives		Stanley dis 60% to dis 50% to dis 50% to dis
fron Rim	Bue	Smith's Patent Gimiess. Nail and Spike	per doz \$18'00, dis 40 %	" Shoe " " Bread " Hay and Straw, " Wadsworth Table and Pocket		Stephens'dis 60&10 % dis 50&10 \$
Grade Heys. Gray's hatchet. Bells. Hand, Light Brass. Gray's Barbell S.	Chisees. D.R. Barton Tool Co. (all kinds)	"Smith's Fatent Glanies Siske. Nail and Spike. "Bee" Gimets. Double Cut, Sheparason's. Hartwell's. "Ves" Douglass'.	dia 40 %	Carriage (Jap'd 8) cenus per	gross)dis 60&10 %	Willis Torait & Son
Hand, Light Brass	cite skilk 10 %	" Douglass". Giue Pots. Tinned and Enameled. Family, Howe's "Kurska". L. F. & C.'s "Handy". Greins "Sone Fixtures Structures Fatent Hart Mig. Co.'s " Hart Mig. Co.'s " Hanmuers.	dis 30 @ 35 %	" Plush TIp. " Elastic End. No. 8. Door, Mineral. " Por. Jap d. " Pated. " Por. Jap d.	₩ doz \$1:75)	Beader & Adamson's Fint, 00 to 1%\$4 25 # ream
" Swyse	Hart Mig. Co	Grind Stone Fixtures Sargent's Patent Reading Hardware Co.	dis 65&1) %	" Por	# doz 6'25 & 2 5 for cash # doz 6'25 	Star
"White Metal. dis location of the series of	Hart larg.	Hart Mig. Co.'s		Ladies. Melting, Hart's "Sargent's "Reading. "Mooroe's Patent	dis 50-6:10 %	Common
Conce's. dis sole 10 % Lever, Sargent's. dis sole 10 % Taylor's Bronze or Flated Lever. net	" Spear & Jackson's	Hammers. Emmet Hammer Co.'s Handled. Sledge & Humason & Beckley Mfg. Co Maydole s. Henry Hammonds' (Maydole's Li Cheney's	Stone. # 10 40c.; dis 40 % dis 16 % & 10 % dis 16 % & 10 % dis 12 % dis 12 %	Lanterns. Tubular	o. 0, \$11.0; No. 1, \$14.50 net b, per doz \$11.15—dis 10&10 %	Fatent
"Hart, Bilven & Mead Mfg. Co. dis 50&10 % Pull. Brook's dis 50 % "Hart, Bilven & Mead Mfg. Co. dis 50 % "Als 50 % "Brook's dis 50 %	Iron, Providence Tool Co.'s. Wri. Iron dis 30 % Adjustable, Gruy's. dis 30 % Lambert's dis 30 % dis 40 % Snow's dis 40&5 %	Verree	net @ dis 5 % 418 5 7 dis #0 %	"Monroe's Patent Lanterns." Tuoular." No. 6 Brady's Fatent. Etns. Yankee. De Beoue. Police, Smail. Lar-t Fresses. Draw Cut, 14 inch. Lemen Squeezers. Porcelaiu Lined. Eureka, Tinned. Dunlap's Improved. Lines.	dis 10 & 10 \$	Sash 4.0cks. Ciark's, Nos. 1 and 2, \$1000 per gross
Westers. dis 25-20 Oct. On 15 % Call. dis 15 % Call. dis 20-20 (dis 20-20 ft 20-20 f		Yerks & Plunib. Magnetic Tack. Magnetic Tack. Warner & Noole's. Hand Cuffs, 44 Up per par Tower's Hand Cuffs, 44 Up per par Providence Tool Co.'s Hand Cuff	dis 20 %	Police, Smail. Lur-: Frences. Draw Cut, 14 inch.	per doz \$7.50 net	Walker's dis 10 s New England dis 20 s Hammond's Window Springs dis 20 s New Laghts — Solid Eyes 2 s 2 s 2 s 2 s 2 s 3 s 3 s 3 s 3 s 3 s 3 s 3 s 3 s 3 s 3
	Clips, Axle. dis 40 s Norway or Best. dis 50 @ 55 % Superior. dis 50 @ 55 % Cocke ves 1½ in., 28c.: 1½ in., 33c.; 1½ in., 3 ic. net	Bandles.	\$15 per doz dis 10 %	Porcelate Lined Eureks, Tinned Dunlap's Improved	per doz \$7 00, dis 15 % per doz, \$ 0 00 dis 10 % per doz \$6 00 net	Ferguson Gas 83% Norwich das 25
Cow - Common Wrought	Cocks Cock	Nos. 0 1 2	3 4	Juniap's Improved. 1.ines. Linen Fish. Cotton Chalk. Sil. Lake Chalk. Nos. 0, 1, Mason's. 1.ocks and Latches. Cabinet—Gaviord.	die 40 G 45 s	*aw Frames
Blacksmiths', Common. List of Sept. 15dis 25 % Extra and Pittsburgh Patterndis 10 %	Brightondie 90 #	For dot \$100 110 Roggin's Latches. Bronzed Iron Drop Latches. Wrought Chest. Surface Chest. Flush Chest.	.per doz \$1.00 @ 1.25 uet 	Locks and Latches. Cabinet—Gaylord Eagle.	dis 25.5 dis 22.5	Sau W. Sau West
Hand Bellows. Hind Adjusters.—Domestic # doz \$3—dix 20 %	Board and Box.	Coffin	dia 60&10 \$dia 50&10 @ 60&10 \$dia 50&10 @ 60&10 \$	Cabinet—Gavlord. Eagle. Trunk Eagle. Langstroth & Crane, Round E Barnes & Deitz, Flat Key Yale Lock Co., Flat Key Sargent & Greenleaf, Flat Ke Shepardson's, American Lock Mfg. Co. Plate. Trenton	Key dis 40 % y dis 33% % y dis 25 %	Hand, Fanel, Elp. &c. dis 15 % W. Peace's Circuiars dis 25 % "Mill, Gang and Mulay dis 25 % "Cross Cut, Wood, Hand, &c. dis 20 % k. M. Boynton's Lightning, Cross Cuts. dis 20 % "One-Man, all lengths dis 40 % 10 % "Buck Saws (Cross Bar)per dos 26 % "Stillet Webs per dos 26 % 10 %
Washburn's Patent	Compasses and Dividers. Benus & Call Co.'s	Brag Awiper Hickory Firmer Chisel, ass'td	dis 15 % gross \$3 50—dis 20&10 % 5 25 —dis 20&10 %	Yale Lock Co., Flat Key Sargent & Greenleaf, Flat Ke Continental Shepardson's	iy. dis 40 g dis 20 g dis 25 g dis 25 g	E. M. Boynton's Lightning, Close Cuts
Biling Scaples. Boardman's Patent, Min. and larger	Cook	Apple large ass'td	0 00 -010 40 00 10 %	American Lock Mfg. Co Plate Trenton Brunford	dis 3314 %	Buck Saws (Cross Dar) per dox \$2.50 iiiiir Webs per dox \$4.50 for the per dox \$4.50 for
Pilocks. dis 25 \$ Cafferential Pulley Blocks. dis 25 \$ Tackie, Rope and fron Strapped, Providence Tool Co.'s ist. dis 10 \$	Bradley's dis 15 ⊕ 20 % Chas. E. Little dis 20 % 5 % D. R. Barton Tool Co. dis 20 % 15 25 % dis 20 % dis 25 % dis	Flie	4 4 0-dig 204:10 %	Norwich	TANK OF THE PARTY ANDRE	Nos. 10: 102 108 104 105 106 Per dox \$1200 1000 1200 900 800 600 600 dia 10 €
Stanley Rule and Level Co	Corn Knives and Cutters.	Patent Auger, Ives'	per set \$1 25—dis 10 % er set \$1 00—dis 30&10 %	Numell & Fruin. Norwalk. Nashua. Mailory, Wheeler & Co. P. : F. Corbin. Parker & Wulpple. Jacoba & Numlek Mg. Co. Nashua.	sna 2% for cash	Saw Sets. \$\psi\$ doz \$5^00_\dis 10 \$\frac{1}{20} \] Stillman's Genuine. \$\psi\$ doz \$5^00_\dis 10 \$\frac{1}{20} \] Imitation \$\psi\$ doz \$5^20_\dis 20 \$\frac{1}{20} \] Common Lever. per doz \$5^00_\dis 20 \$\frac{1}{20} \]
Cast tron Garrel, Shutter, &c	Crew Bars. \$\psi\$ bile. net liron, steel points. \$\psi\$ 5c Crucibles.—Gautier & Co. \$\psi\$ No. 5\psi\$ Curling irons, &c.	Barn Door "Anti-Friction" No. 1, \$1.25; No. Noveity		Jacobus & Nimick Mfg. Co Padlocks, tiussell & Erwin Mallory, Wheeler & Wm. Wilcox & Co. American Lock Mf.	k Co dis 35&5 %	Stilman's Genuine
" Shutter dis 60&10 %	Curling 1ross, &c. dis 10 s 5, %, % in., \$1 80, \$2 00, \$2 40 doz \$6 50 dis 10 s Curling Tongs \$0 doz \$6 50 dis 15 s Pinching Irons \$0 doz 7 50 dis 20 s Curry Combe.	"Anti-Friction" No.1.\$1'25; No. Noveity. Challenge Climax No.2 Harness Snaps. Henshaw's.		" Vulcan Hardware (g. Co dis 334 %	** Aiken's Genuine\$14'80 dis 40\$ ** Imitation
Carriage and Tire, Common	Pinching Irons	Henshaw's Jund's Fitch's (Bristol) Hotchkiss Andrews' Sargent's New York Wire Hatchets,—isaiah Blood Shinging, Nos. 1 2 8	die 40 %die 30 %die 10 %	J. H Mc Williams. Barnes & Deitz Miller's Patent Penn Lock Works. Mallets.—Hickory and Lig	0dis 20 %dis 5 @ !0 %dis 5 @ !0 %dis 25 %	Scales
" " Sheiton's(old list) dis c.dt.10 % Union Nut Company, old list	Wood Tooth (Fuller Bros.)	Sargent's. New York Wire. Hatchets.—Isaun Blood Shinging, Nos. 123	dis 30&10 % dis 20&20 \$	Divon's (P. S. & W.) Nos. 1	mumvitaedis 20 g 2 8 \$17 00 \$19 00 \$30 00 dis 25 g	Fairbanks new list dis 15 @ 20 g. Howe's dis 15 @ 30 g. Chatillon's Grocers dis 25 g.
Shelton's Shaved Head. die 30 g Machine. dis 50 € 00 f Beit Enus. dis 40	American Pocket { Cutlery Co }	Claw, "123	doz 7 75 8 80 9 25 1 doz 7 50 8 00 8 50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Miles Challenge Nos 1	880-00 840-00—dia 80 \$	Universal Family
Hover's, no Augers	Dippers. Britanniaper doz 7:50—dis 30 %; by bbl. dis 33}4 % Coccae Plainper doz 83:25—dis 30 %	Latching. 123. 44 Hunt's Shingling, Nos. 123. 44 Claw, 123. 44 Latching, 123. 44 Hurd's		Perry's (P. S. & W.)Nos. : \$\pi\$ aoz. \$\pi z\$ Woodruff's (P. S. & W.) Hales'Nos. : 11 \$\pi\$ doz. \$\pi 27.00	Nos. 100 150 doz. \$15.00 \$15.00—tis 25 \$ 12 13	Universal Family Scale Beam 1200 lbs
with Augers 940 1140 dis 40 5	Bog Collars Enbosed Gilt. dis 20 % Leather. dis 30 %	Lathing, 12 S. W	doz 9 00 9 50 10 00 doz 8 00 8 50 9 00 doz 8 00 8 50 9 00	Each 206	00 \$90°00 \$42°00—dis 40.82 \$ 7 00 \$90°00 \$250 00—dis 20 %	Defiance Box and Ship. dis 25 \$ Foot dis 60 & 10 \$ Ship (common) per dox \$8 00 met Ship
Sweets	Brass	Claw, 123	log 7 25 7 75 8 25 2 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	American	\$15:00 \$00:00 \$60:00 \$25:00	Hart Hi ven & Mead dia ASA-10 4
With Augers	Gray	Lathing 128 90 Series & Plumb Shinging, Nos. 128 90 Claw 128 90 Lathing 128 90 Shamon 128 90 Lathing 128 90 Local 128 90	10z 7 50 8 00 8 50 10z 7 50 8 00 8 50 10z 7 00 7 50 8 00 1	Bush's	dis 40&10 %	Dission's
Hotchkiss'	Japanned. per doz \$200 250 500 Coppered per doz 4:0 4:0 500 dis 10 ≤ Gaivanized. per doz 5:30 4:00 4:00 dis 10 ≤ Nickeled. per doz 5:30 6:40 7:00	Shingling, Nos. 0198 # doz Claw, "128 # doz Lathing, "128 # doz Broad. "128 # doz	9 00 9 50 10 00 8 00 8 50 9 00 9 00 10 00 12 00	Mortars and Pesties.	ner der #940	Screws. 1. 75, R. & K. Mfg. Co. dis 56476 \$ Round Head Iron Am. Sc. Co. dis 52476 \$ Round Head Iron Glas 1
Braces Gis 40e5 5 Gis 40e5 5 Gis 40e5 5 Gis 50e5 1 Gis 40e5 5 Gis 50e5 1 Gis 40e5 5 Gis 50e5 1 Gis 5	Philadelphia	D. R. Barton Tool Co. Shingling, Nos. 123. W doz Lath. 123. W doz	20 00 16 00 18 00 1 20 00 22 00 10 00 10 00 8	Natis. Nuts and Washers. Squere and Hex., New List Mo	arch 1, '767c off list	Round Head Brass " " " dis 40 % Brass and Silver Capred, List March 1, 75
Noble's Patent	Drawing Knives. Crossman's No.1. dis 50&15&0 9 5 Crossman's No.1.	J. P. Verree & Co. Shingling, Nos. 128	oz \$11 00 10 50 10 00 8 10 50 10 00 8 10 50 10 00 9 50 10 00 8 50 8 50 8 50 8 50 8 50 8 50	Olters, Milier's Zinc, Brass and Coppe Sheet Metal Screw, Zinc, Bras Dimsted's	erdis 40 @ 45 g	
Noble's Patent.	Hart Mfg. Co., No.1	Lathing 123. Underhill's Shingling, Nos. 128.	102 7 00 7 50 8 00 1 102 7 25 8 00 8 75	Broughton's	dis 25& 10 g	Brass, 4 4 10 2 10 2 10 2 10 2 10 2 10 2 10 2
Hall Halls	Drills and Drill Stocks. Biscksmiths each \$2 60 net Breast P. S. & W each \$7 50 net	Lathing. " 128	dos 13 00 11 00 13 00 10 10 10 10 10 10 10 10 10 10 10 10	Ox Balls		Birmingham Screw Co. Brass dis 404/1/5 Nettlefold's Brass dis 00 @ 6045 Bench rop dis 60 104/10 Wood Beach dis 60 104/10 One of the control of the contr
D. R. Rarton Tool Co	Breast P. S. & W dis 45 5 Breast Alken's dis 15 kiu S Hotchkies dis 15 kiu S Wilson's dis 10 k Miller's Falls dis 25 k Miller's Falls dis 25 k	Haif Hatchets, Nos. 123	oz 8 00 8 50 9 00 2 10 00 10 00 10 00 11 00 18 00 14 0	Bound Gilt Dixon's Lead Lumber	# gross \$6 00 net gross \$450 net gross \$450 net gross \$900 net	Japanned, List of Plain Screws of Sept. 1, 1875 d. s. 30 s. Macanne—Flat Head, Bros. List Jan. 12, 1875 dis 1875 di
819-0 821 0 824-0 827-00 830-0 837-50 836-50 840-00 Hart Mfg. Co		Emrire Hatchets, M. H. Jones & Shingling, Nos. 123	oz 16 50 18 00 19 50 B CO	Brass Head	dia 60&10 \$ J	
Stratic Stra	Moore's Triple Action	D. R. Barton Tool Co. Shingling, Nos. 128	02 4 75 5 10 5 25 0 10 5 25 0 02 7 25 7 50 7 75 p	Pinking frons Planes and Plane Iron frot Quality	Der doz \$2 75—dis 65&10 \$	Cast

Blood's Excelsior and Granger # doz 11 00 dis \$1:50 "Young America	METALS.
Wadsworth's Grassdis 30 % Bueh dis 20 % Soythe Snaths dis 20 %	*RONDUTY Bars, 1 to 1% cents per 1b., Sheet, Ban-
Shears and Scissors dis 75&10 \$	Hoop and Scroll, 14 to 1% cents per ib. Provided, the none of the above Iron shall pay a less rate of duthan 35 per cent. Pig. \$7 per ton: Polished Sheers.
Seymour's Straight Trimmers. die 60&10 5	HON.—Dury Bars, 1 to 1% cents per lb., Sheet, Ban Hoop and Scroll, 1% to 1% cents per lb. Provided, th none of the above Iron shall nay a less rate of du than 35 per cent. Fig. 5; per ton; Polished Sheets, cents per lb., Wrought Scrap, 48 per ton; Cast Scra 50 per ton. Railroad. 70 cents per 100 lbs. Holler at Plate, 1% cents per lb.
Pruningper doz \$10 00—dis 40 % Barnard's Lamp Trimmersper doz \$3.78	
Sheaves Shiding Door, M. W. & Co. list dis 35&5&2 Shiding Door, M. & E. list dis 50&5&2 Shiding Door, M. & E. list dis 50&2 dis 50&2 Shiding Shutter, R & E. List dis 50&2 Shiding Shutter, R & E. List dis 50&2 dis 50&	Foundry No. 3
" Hatfield's dis 50&2 % Russell's Anti-Friction dis 50&2 %	Cortness
liding Shutter, R & E. List	Gartsherrie 29 00 Eginton 27 50
Shovels and Spades	Sar fron. Am. Redued, at mill 2°25c. @ 2°35c
Gowland B	American. at works, currency
J. E. Jennings & Co	Wrought Scrap, from yard " 29 00
Shove s and Tougs. Shove s and Tougs. ron and Brass Head, t. & E. list. dis 50&10&2 \$ ron and Brass Head, t. & E. list. dis 50&2&10 \$ ron and Brass Head, t. & dis 50&20&10 \$ ron and Brass Head. dis 50&10&2 \$ ron and Brass Head.	ommon Iron.
Sintes. Quare Frames, Round Cornered, by casedis 70 % Less than a case	\(\to \frac{2}{\text{ in. round and square}} \) \(\to \frac{2}{\text{ in. x \times to i in}} \) \(\to \frac{2}{\text{ in. x \times to i in}} \)
Spokes.	Sender 1701 Sender Sen
spoke Shaves	Bands—1 to 6 x 12 to 8-16
North Carolina Handie Co. 1812 25 5 Spoke Shaves. new list dis 25 5 7 01. dis 35/46/10 7 0	Wedish from. Ordinary sizes
Somey	Sheet Iron. Common R.G. R G
Onglass'	Nos. 10 to %)
Inned Iron. dis 10 % By the case dis 30 % d	3 to 36
ritannia	Galvan zed, 14 to 20, prime, w # 8% c ; 2d quanty # 9 7%
teed & Barton	5 37 4 103c 4 13c
lckel Siver Co	Patent PlanishedA, iSc.; B, iIc. w m tussta, Nos. 8 to 45
Species dis 10 10 10 10 10 10 10 10	Ore piece Corrugated Sheet from Elbows.
n (Cowles Hdw. Co.)	## 5 5 5 6 6 7 Inch. 12'50 3'50 4'50 5'25 6'50 per do
Stocks and Pies	12°50 3°50 4°50 5°25 6°50 per do RUSSIA (RON. 136 5 56 6 7 Inch. 14°00 per do 12°00 12°00 14°00 per do
Tone	5 5 5 6 7 tnch. 500 700 950 1200 1400 per do
Vashita Stone No. i, W Sic net No. 2, W Sic net No. 2, W Sic net	OPPER - Do: T Fig. Har and ingot, 5c.; old copper tens # &; M.u., if actured (including all articles which copper is a component of chief value) 45 \$ 4
rkansas Stone No. 1, 9 h \$1 '85 net Slips No. 1 10 h \$2'50 net	valorem. American Ingot
ringstones, ramity, Loring's	HANTED OF THE CORPUS BOTTS AS
"Stave "olish.	square toot
	Stratiers Copper, ordinary (1208), over 16 0s., per square 100t. 30c w Stratiers Copper, ordinary sizes, 16 0z. and over 12 0z., per square foot. 34c. 4rasters (copper, 120 a. per square foot. 36c. (Fireles less tant 98 inch in chameter. 55c. (Fireles 148 then dishue the state over. 58c. 48c.)
lekel Plated. add \$1 50 @ \$4 00 \$\tilde{q}\$ doz net ry Squares and T Bevels. dls 454:40 \$	Circles, 84inch dismeter and over
far Try Squares and Bevels	heathing Copper, over 12 oz. per sq. ft
Winterbottom's Try sna Mitre	No Copper is Sheathing except 14x48 nches, and not except 34 oz. to the square foot.
Tacks, Half Weight, American dis 75& Full 018 5. Mc	Chaething Conner tinned on one side by the
Pull dis 10.8 dis 10.8 dis 10.8 dis 10.8 Carpet, Am. and Swedes dis 10.8 for cash Copper Leather Head dis 10.8	Case
" Copper	O'NEILL'S PATENT PLANISHED COPPER.
4-8ths and longer, 9c.; 31/-8ths, 91/c. E B, dis 10 %	t and 16 oz. and heavier3ic. By the case, 36c. \$\pi\$ 2 oz. and lighter40c. " \$\pi\$ 39c. \$\pi\$
25 2) 17 1) 13 11c. W B. dis 10 t	2 oz. and lighter
Description	4 and 16 oz. and heavier
Tapes, Measuring.	Brass. Brown & Sharp's Gauge the Standard except for Fx
ddy's. dis 20 4 Tea Trays. merican Tea Tray Co. dis 15 5 Thorsunglers.	BRASS MANUPACTURERS' PRIOR LIST.
Tin Casedis 500£10 \$	October 27th, 1875.
Toc Unites	quantities of 100 pounds and over at one time. Fi less than 100 pounds, three cents additional.
Winsted	All Nos. to No. 28, and widths 14 in. and under2
Nashua Lork Co.'sper doz \$1800—dis 50 % Tinners' Tools and Machines.	Over 30 in. to 30 in., inclusive
Traps. dia 25	All Brass thinner than No. 38 is Platers' Brass. at4
Traps. Traps. Peck, Stow & Wilcox. dis 25 s Peck, Stow & Wilcox. dis 30 s Hotekhiss. old list dis 30 s; new list dis 10 s Blake's Patent. dis 30 s Gone, Wood Choker. w dox holes, 15 op 16c Fatent Choker Union	and lengths3
Patent Choker Union Nut Co.)	argu av sheets, in diam. from 4 in. to 14 inclusive3
Blake Patent dis 30	Sheets 24x8 in. and all sheets out to particular sizes and lengths. Printers' Rules. Sheets wider than 30 in and under 40 in. 40 in. and over. Lyou as wheets, in diam. from 4 in. to 14 inclusive. 3 over 14 50, 50 50 50 50 50 50 50 50 50 50 50 50 50
Patent Self Settingner doz holes 25c net Catch-em-alive	LOW BRANS.
Catch-en-alive # doz \$125 net Troweis Othrop's Brick and Plastering dis 10 s Disson's Brick and Plastering dis 15 s Cacc's Plastering dis 20 s Cacc's Plastering dis 20 s Cacc's Brick dis 5 s Cacc's Plastering dis 20 s Cacc's Brick dis 20 s	Four cents * * more than High Brass. Gilding Metal '1c, * b more than High Brass. In Bars. In Bars. Sawed. Planed or Polished.
tose's Brick dis 5 % gold dis 10 % gold dis 10 %	
Vorrall's Brick and Plastering	FOR SLITTING. Metal, in width 2 in. to 1/2 in. to No. 30, inclusive, 12. p
Ventilators (Window), per dozen \$1600 @ 1800	b. advance. Metal, in width 2 in. to 1 in., thinner than No. 30, 2c. p
Vises. olid Box, Trenton 4) to 16) lbs., 16c.: 160 and over, 30c	Metal, in width 1 in. to 1/4 thinner than No. 30, Sc. per advance. Metal, in width 1/4 in. to 1/4, to No. 30, 2c. per B. a
Vises, Olid Box, Trenton42 to 142 lbs., 16c.: 160 and over, 20c wilson's	wance. Metal, in width 1/4 in. to 1/4 thinner than No. 30, 5c. per
Wilson's dis 30&10 % Sargent's dis 55&10 %	advance. Metal, ¼ in. in width and less, i0c. per lb. advance
" Backus and Union dis 15 % " Merriil's dis 15 %	GERMAN SILVER MARKET METAL AND WIRE Market Metal. Will A per cent 12 in to No. 26. 20. 20. 20.
Peter Wrights de gold arallel Parker's dis 21 x Wilson's dis 30 x 10 x 25 x Wilson's dis 50 x 10 x Sargent's dis 50 x 10 x Treaton dis 15 x Backus and Union dis 25 x Merrill's dis 15 x 10 x Dutal Signature dis 15 x 10 x Simpson's Adjustable dis 16 x 20 x aw Fiers, Bonney's per dox 22 0 dis 20 x Wheel Harrows.	4 per cent., 12 in., to No. 38
simpson's Adjustable dis 20 s aw Filers, Bonney's por doz s20 00 dis 20 s Stean's por doz s20 00 dis 20 s	15 1.00 1 18 4 1.10 1 20 1.20
Wheel Barrows.	German Silver Sheets over 12 in. wide, and weighis more than 10 bs., 42 per b., net. Advance 2c. for each additional in., in width shove
Hopkins per doz 21; 30 dis 10 5 Wheel Barrows. anal (Pugsley & Chapman) new list dis 50 5 acob's Pat. Seif-Oiling R. R. and Canal dis 20 5 Well Wheels dis 60&10 5 Wire dis 60&10 5 Wire.	in., and 2c. per w. on each No. thinner than Nos. 26 to
Well Wheels. Sevised list	All German Silver thinner than No. 36 is Platers' 50c. per '8. additional. German Silver Scrap one-third less than net price of in. Market Metal. German Silver Turnings, Filings a
right and AnnealedNos. 0 @ 18 dis 45 @ 50 \$ 19 @ 28 dis 50 @ 65 @	Chips, half the price of Scrap.
Wire. Trass and Copper . List of Oct. 27, 1875, net Fright 27d Annealed. Nos. 0 @ 18 dis 45 @ 0 \$	High Brees, Low Brees, Con
aivanized, Nos. 1040 18. market list dia 15 6 20 5 inned dia 25 6 30 7 ast Steel	Nos. 2: 2, 25
ayranged, Nos. 19 49 18. market uss 10 & 20 5 model mod	Wire straightened and cut, mailer than No. 5040 044
nnealed Fence. Nos. 6 and 9	Fancy Wire not less than 4 cents per pound advan- of Round Wire. Spring Wire, 2 cts. per lb. advance.
ence Staples W B 7% @ Sc tune Steel Wire \$7 00 to £ gold	FINE WIRE, BY THE OLD ENGLISH FINE WIRE GAUGE
looker Time Wire ner coll 65 C 60c net	High Brass. Low Brass. Cop No. 26
merican Adjustable	No. 27
U Diagonal H	No. 29.
Ollins & Co. 2	No. 82
Diagonal dia 20 5 Ollina & Co. * dia 45 4 Oles' Genuine dia 68 ki 10 5 Pattera (Wrought) dia 68 ki 10 5 (Maileable) dia 56 ki 10 5 Mamond Hardware Co. dia 55 ki 10 5	
Diagonal dia 20 5	No. 35
" Diagonal " dia 20 5 Ollina & Co. 2 dia 45 4 Ocer Genuine. dia 604-10 4 " Pattern (Wrought) dia 504-10 8 Mamond Hardware Co. dia 40 5 Inday * Pattern. dia 25 4 At's Pattern. dia 25 4 At's Pattern. dia 20 5 Emis & Cail* Pattern. dia 2045 4 Merrick's Pattern. dia 324-24 4 Merrick's Pattern. dia 324-24 4	No. 35. 0-98 0-78 1 No. 36. 0-78 0-78 0-78 0-78 0-78 0-78 0-78 0-78
Diagonal dia 20 5	No. 55.
Diagonal dia 20 5	No. 55
Diagonal dia 20 5	No. 55.
Diagonal " dis 20 s	No. 55.
W renches a table	No. 55
Diagonal dia 20 s	No. 55
Diagonal dia 20	No. 55

THE 1RON AGI	t
Plain. 21NC TUBING. 28	80 20
Scotch and Extra Patterns. '34	1
4 Per cent	,
MISCELLANEUUS. 1985	
Door Rail. SCRAP. High Brass Scrap, 16 cents. Low 18 cents.	2
Onunis, access. Turnings, Filings and Chips, half the price of Scrap. Turnings, Filings and Chips, half the price of Scrap. Griders for Goods on this list received on or after this date, will be filled at the rate herein stated, Frans—Net cash. No discount allowed. Interest to be added after thirty days.	1 1
ANTIMONY	5
LEAD - Durn : Pig \$1 per 100 lbs.; old Lead, 1¼ cent per 10 . Pipe and Sheet, ½ cents per lb.	1
Sheet dis 10 % 10 %	1
**O).DER	
Tool	
Am rican Cast Steel Too Am rican Cast Steel Too Am rican Cast Steel Too 100	
Chrome Steel.	
Ragitan Steel	
" 2d quality " 13 c	
Sheet Cast Steel, 1st quality " 1740	
### 2d quality ### 14%c ####################################	
SPKLTER—DUTY: in Figs, Bars and Plates, \$1.50 per 100 lbs. Sulestan, cash	
TIN—DUTY: Plates, Sneets, Tagger and Terne, 1 lc per lb.; Electro-galvanized Plates, 2 cents per B; Manufactures of, not enumerated, 35 per cent. ad val. Bars, Blockand Pigs, free. Banca, subject to duty of 10 per cent. Hanca. \$\psi\$ 25c., currency Straits. \$\psi\$ 25c., currency Straits. \$\psi\$ 25c., currency \$\psi\$ 27c., currency \$\psi 27c., currency \$\psi\$ 27c., curre	
TIN PLATES, CUREENCY PRICES. 1 C 10x14, Prime Charcon	
12x12,	-
CORF TIN PLATE. CORF TIN PLATE. CORF TIN PLATE. COMMENT	
Prime Char. 20 quai. Coke. 1 C 14x20 16725 7:50 7:00 6:125 1 X 14x20 1600 15:00 15:00 14:50 6:15:00 15:00	
I U 14x30 M F. Brand	
Paper Stock, Old Metals, & c	
Canvas linen	
Cauvas linen 6 6 5 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
State Woolens 25 6 8k	N
Grass rope. 35 4 4 Tarred Shaking. 15 6 15 White Coiar Custings, all paper 7 Bavelope main lined 7 Bard White Shavings, No. 1 65 Soft 8	
Envelope muslin lined. 5 Hard White Shavings, No. 1. 6 Soft White Shavings, No. 1. 6 White Shavings, No. 2. 5 Mixed Shavings, No. 2. 5 Mixed Shavings, No. 2. 5 Sook Stock, Mixed. 5 No. 2, light. 5 No. 2, light. 5	
Newspaper Stock 33% Prints. 13 @ 2 Pure Manilas. 24	
Bogus Manilas and Hardwares 1	
Copper € 17 Yellow metal. 135 € Brass, light. 96 Brass, mixed. 10 Heavy Composition. 10% Oid lead, solid. 6 € Tes lead. 6 €	
Tea lead	ľ
Stove plate. Per ton \$700 Paints, Oils, etc.	
Biack lamp—Coach Paints. Biack lamp—Coach Painters. Ordinary 6r Ivory Drop, fair. 150	
Toronary 6r 1 1 1 1 1 1 1 1 1	*
"Chinese dry in oil 55 4 65c Sic Ultamarine 55 6 30c Brown, Spanish 11/c	
Chinese dry. Ultamarine. Brown, Spanish. " Van Dyke. Carmine, 40. Green. Carone. 15 a 26. From 15 a 36. Miberal Paints. " 16 a 36. Miberal Paints. " 16 a 36.	
Mineral Paints 104 4 4 6 6 6 7 1 4 4 4 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•

tose Pink	Gum, Copal				254
Raw	Shellac, English. dark	*******	*******	*** ****	916.
In oil					
** Raw	Putty in bladders	******	******	******	314
	" in tulk. Rotton Stone, soft, English	*******	******	**-***	50
4 Trieste 110 "	Spirits Turpentine				
	Gla		*****		20
vinte Lead, American, pure dry	FRENCH WIN				
Vhite, Paris, English, prime	Prices current pe	rbox	150 fee	t.	
American, Commons. 23c	Single 1				
In casks 1/sc 1/s	BIZES.	1st.	ěd.	8d.	4tn.
ing White American No. 1 der	6 x 8 to 10 x 15	\$ 7.50	8 6.75	8 6.25	5.75
1, in oil	11 x 14 to 16 x 24	10:25	7·73 9·75	7:25 8:75	6.8
French (Paris)	15 x 36 to 24 x 30	\$13+13.K	10.75	0.00	1 10
Our.	26 x 36 to 26 x 44	14-50	11:50	9.75	
dnseed Raw gal. casks, 55c. bbl., 57c	26 x 46 to 30 x 50 30 x 51 to 30 x 54	15:00	14'00	11'25	
Whale, Crude	30 x 56 to 84 x 6	17:05	14:50	12:00	
Bleached Winter 75c	84 x 58 to 34 x 60	18:25	17:25	15:00	
Sperm, Crude	36 x 50 to 40 x 60 Double	20°75	18.75	17:25	-
eal, Extra Refined	SIZES.	lat.	2d.	88.	88h
ard Pure Winter ** 1:15	The second secon		4754 Or pay		-
Boring	6 x 8 to 10 x 15 11 x 14 to 16 x 24	19:75	\$11:00 12:50	\$10.00 11.75	8 9:23
Southern Yellow " 67c	18 x 22 to 20 x 30	15198	15.75	14'00	10 190
White	15 x 3 to 24 x 40	21:00	17:25	14:50 15:75	
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Asphaltum50	26 x 46 to 30 x 50	28.75	22:50	18.00	
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	more than 40 inches wide.	All size	es ahov	o 52 inc	hos to
38 € 44c 4 Sheet	length, and not making more be charged in the 84 united in	a than !	d unite	d inche	s, will
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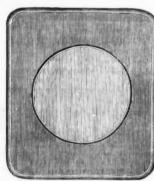
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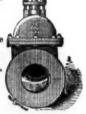
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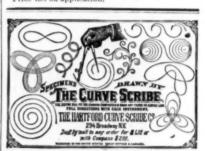
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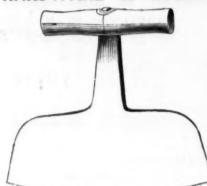
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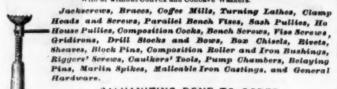
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Terms, 30 days. For 60 or 90 days, interest added at 10 per cent. per annum.	
Anvils. —Solid Cast Steel. —₩ № 14c Peter Wright's, ₩ №, gold. … 11 ⊗ 10%c Wilkinson s … 11 c	
Apple Parers.—Domesticper qoz \$ 7:50	7.8.
Peach Parers. " 10 50 Bay State Parer, Corer and Silcer. " 13 50 Other makes. " 7 80	
Lots of 5 to 25 dozen special price. Axes.— Mann s (according to weights) Per doz. \$11 00 @ 10 50	1
Red Indian. " " 1 00 d 10 00 Red Chiertain " " 11 50 d 11 00 Crown Frince " " 11 50 d 11 00 Hunt's " 12 50 d 11 50	
Aurors and Augor Bits.	
Benjamin Pierce dis 35 5	2
	20.00
Bonney's Pat. Hollow Augers	1
Batances.— Light or "Common". dis 25&10 g All other Spring Balances. dis 25 g Bells.—Bevin Bros. Mrg. Co. Light Hand	1
beits. dis 70 % Common (Tissue Paper Weight) dis 70 % Ewiss Pattern Hand Beits dis 70 % Ewiss Pattern Hand Beits dis 50 % Conneil's Door Beits dis 50 % Gt. Western & Kentucky Cow dis 60 % Ewring Machines.—Bates Mfg. Co., com-	1
Gt. Western & Kentucky Cow	
Common doring Machines, no Augers\$4 00 @ 8 75 Anguar 5 00 @ 4 75 Reits	
Bolta	
Braces.—Barber s	
Spoilard dis 50 % Butts dis 25&10 @ 30&10 & Broad dis 25&10 @ 40&10 & Broad dis 35&10 @ 40&10 &	1
Cast Fast Loose Joint. dis 45&10 @ 50&10 @ 50&10 @ 50&10 @ 50&10 @ 45&10 % Mayers & Parliament. dis 55&10 @ 40&10 % 40&10 & 50&10 @ 50	
Spoilard	
Parker's Blind Butts Discount 65-210 f: by the	
Bhepard Lull & Porter's (Phila.) Hingesdis 65 %, case, 60&5 % Garretson's No. 0 Hinges	
Cherrytree Ro	
Clark's case 70 %. Shepard Luil & Porter's (Phila.) Hinges dis 65 %, case, 60% 5 % Garceton's No. 0 Hinges dis 65 %, case, 60% 5 % Cherrytree No. 0 Charles,—German Hatter and Coll dis 20 % 2 % 1 Galvanized Pump net 13 % 18 % 18 % 18 % 18 % 18 % 18 % 18 %	
ChiselsSocket Framing dis 60 @ 60&10 g Booket Firmer dis 60 @ 60&10 g Tang dis 60 @ 60	
Beat's Franching and Firmer	
Porciain Wheel	0
Monitor	5
Coffee Milla.—common stox and Side	2 2
Goodnow Mfg. Co. Manufacturers' net prices Drawing Knives.—Hart Mfg. Co. 5	6 16
Beatty	16
Fyy Pans. Tinned. # doz850 400 450 500 550 650 750 900 100 No. 0 1 2 8 4 5 6 7 80 100 No. 0 1 2 8 4 7 5 5 4 6 00 7 90 800 90 Burnished. # doz850 375 425 475 5 4 6 00 7 90 800 90	60
Files. Nicholson Mill Filesnew lis	t
## Taper. ## £ gold \$4 75 @ \$4 5 ## ## ## ## ## ## ## ## ## ## ## ## #	0
	t
-8 in. roll	t
Hammors, Yerkes & Plumb's.	1 1
Hammord Plumb's	× ×
Beatty 8	0
Yerkes & Plumb. 2 3 56 20 5700	0
Strap and T	% 10
Globe	22 28 21 10
On Ausable Globe and Brundage 1000 \$ lotsdie 5	10 M
R. nebs	9
Till and Cupboard	XXX
No59 5014 60 6014 61 6114 45&5 ft dos	
Trunk Locks dis 25 Thumb and Roggens Latches dis 25 Lanterns.—Square Candle and Oil. dis 20 Glene for Oil dis 20	MM MI
American Padlocks Scandinavian Pad Locks © dos. \$1090 10700 12700 1270 15700 15900 15900 1870 1870 1870 1870 1870 1870 1870 18	***
Western Pattern	×
Boinsses Gntes. Enterprise Mfg. Co. s Measuring Faucets	***
Lincoin s	** *
Hale'sdis 35	**
Planes.—Auburn Tooi Co "Benen dia 49 Second Quality. dis 50 Metalite Piane Co. dis 256:5 Evans Pat. Circular.	MAN
Plumba and Levels. Adjustable	40
Plane trens,—Americanlist n	et
Picks Philadelphia B. Pittsburgh dis 60&10 Rules dis 60&10 Rakes Cast Steel Garden dis 40 & 40&5	BE %
Rakes.—Cast Steef Garden dis 40 @ 408.5 Maileable Garden dis 40 @ 408.5 Wood Head Iron Teeth dis 40 Use 408.5 Use 40 Use	N M M
Wood Head Iron Teelin	00 %
No	80
Bcythes.—Golden Clipper, Dalhascus Blade, Boxed and Sharpened	50
Sharpened \$\psi\$ doz. \$\psi\$ Clipper No. 5. Painted Red, Boxed and Sharpened \$\psi\$ doz. \$\psi\$ Cast Steel Beythes \$\psi\$ doz. \$\psi\$ German " \$\psi\$ doz. \$\psi\$ 600 \$\psi\$ 600 \$\psi\$	00
German " 6.50 @ 7	υØ

Wquares. -Steeland Iron. now_listdis 50 \$

7		_	_
	d - North Community		
	Haws Disaton's Cross Cut, No. 1 pe	r ft.,	, 55c
	Disston's Cross Cut No. 2. pp. Disston's Cross Cut, Patent. pt. W. McNiece s Hu, Cross-Cut & Circ'r, new lls: Boynton's Lightning, new list.	or ft.	50c
	W. McNiece s H'd, Cross-Cut & Circ'r, new list	t.dis	15 %
	Boynton's Lightning, new list	dis	50 %
	Boynton Champion Boynton One-Man Cross Cut Sawsdi Boynton Billet Webs (no Frame)	5 40 de	10 %
			66,00
	Shovels and Spades.		
	Rowland's Plain Back	in dil	\$5 %
	Back Strap	. dis	20 %
	Brady Shovel Co	118 20	45%
	Sad Irons.—Richmond (poilshed face)be Richmond (polished lace) by the cask	r lb.	814C
	Askansas (W. No. 1		3
	Stone.—Arkansas Oil, No. 1 Turkey Ofl. No. 1	fig. ID	Þ
	Wasnita Extra net	8.0	
	No.1net	0.0	80c
ı	Hindostan 8 inch	16	50
١	Meraps.		
l	United States and others in Combination	din	55 %
ŀ		18 55	&5 %
ŀ	Spoons.—	O 40	
l	Plateddls 40 Britannia, Boardmans (new list)	B 508	210 S
l	Parkers (old lift)dis 50	ø 508	k10 %
l	German Silver	dis	30 %
l	German Silver	. dis	10 %
l	Springs, -Grav's Doord	In 60%	£10 %
l			
l	Stocks and Dies. Stove Polish.—Gem. Fg. Onyx. Try Squares.—Winterbottom. die	118 10	MS-00
l	Onyx	14	\$5.00
l	Try Squares Winterbottom dis	10 0	15 %
ĺ			
۱	Disston's No. 2	di	B 40 S
	Tucks, &c. Half Weight Tacks dis 75	@ 754	\$10 q
	Trunk, Clout and Finishing Nails	net to	10 8
	by the case	dis	736 9
	Imitation Oneida Newhouse list (let quel)	18 204	&25 g
	Vises Solid Box. currency	10 m	18160
	Wrenches, Coes Genuine dis 4045	@ 474	£10 g
l	Willis Thrall, No. 2. Disaton a No. 2. Tacks, &c.,—Half Weight Tacksdie 15. "by the casedia Trunk, Clout and Finishing Nalis" Traps.,—Genuine Oneida—Newhouse listd Initation Oneida—Newhouse list (let qual.). Vises.—Solid Box. currency Wrenches.—Coes Genuinedis 50.45. Coes Imitation Wrought Bar	M2 50	₹10 g
1	" (Kellogg) Malleable Bar d	18 65	& 10 g
l	Tarts Pattern (Wrought Bar) dis 70	@ 704	& 10 g
ł	* Improved Baytor	d1	9 25 3
l	" Improved Baxter Adjustable Fork	di	8 25 4
1	WireNo. 0 to 18(Advanced April 24th)	d1	B 50 9
1	No. 27 to 86	din.	50 9
١	Coppered v to 12di	B 10 6	in 201
I	Wire.—No. 0 to 18(Advanced April 24th). No. 19 to 26	di	n 85 1
1		@1	0 40 3
1			
	TOTTETT A T -		
	BUFFALO.		
	Reported by Mesers, Sidney Shenged A.	_	0

BUFFALO.	,
Reported by Mesers. Sidney Shepard & Co. Aug. 1st., 1876.	1
Aug. 1st, 1876. Augers—Snell Mfg. Co	
Hammers Heury W. Kip's dis 18de 5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Book. Coal.—Plath, Black and Galvan'd. new list dis 15 Funnel, Black and Galvanized. dis 15 Funnel, Black and Tinned. dis 50 Funnel, Black and Tinnel, Black and Bl	A SCORE - SENSON
Stamped and Shamaned Stamped and Shamaned Sha	% % % % % % % % % % % % % % % % % % %
Sheets	50 % % TC No. 10
25 Common 4 24 W. D. Wood & Co., Smooth Finish 4 Planished A B. Co., Smooth Finish 15c 11c	40)

DETROIT.

Gen. Russia, No. 1 stain

(Reported by Meses	s, Jennett & Root.)
fune	10, 1876.
Min Plate, - Best Charcos	Pla Tiu
IC. 10x14 8 8 50	Large Pigs 3
IX.10x14	Small Pign 2
XX.10x14 18 50	hars
IC. 12x12 9 00	Bright Wire.
IX. 12x12 11 50	63 lbs. in bdldis
IC. 14x20 9 50	Copper
IX. 14x20 12 00	Sheathing
XX. 14x20 14 50	Copper Bottoms3ic
XXX. 14x30 17 00	Planished Copper
XXXX. 14x30 19 50	Sheathing, 14x48 4
D(: 10) Plate 2 00	
DX	" " No.84
DXX. " 18 00	" No.86
DX, 10 50 DXX, 18 00 DXXX 15 50	Sheet Iron
DXXXX 100 Plate 18 00	No. 18 Am. Com4
IX. 14x14 17 50	No. 24 Am. Com 4
IC, 10x14 W 8 00	No. 26 Am. Com4
IX. 10x14 W 10 50	No. 27, Am. Com4
Loofing Tin Best Char.	W. D. WOOD'S & CO. S SHEE
IC. Terne, 14x20 \$ 8 00	TBON.—
IX. " 14x20 10 50	Nos. 15 to 20 Smooth \$5
IC. Terne, 20x28 17 00	" 21 to 24 5
IX, " 20x28 22 00	" 25 4 26 5 " 21 to 21 Char'l 6
loke Tin	" 21 to 21 Char'l. 6
IC, 10x14 Coke 8 8 25	4 25 & 26 " 6

PITTSBURGH.

Wagon Brake Ratchets, each 25 mished with guard, each Wrought Hammer Straps, heavy pattern, each. 18th rong, each 18th each.

THOMAS W. SPARKS



Shot and Bar Lead Manufacturer. Office, 121 Walnut St., Phila.

N. Y. MALLET and HANDLE WORKS Keep constantly on hand Calkers', Carpenters', Stone Cutters',

MALLETS.



LATHE FOR SALE CHEAP.

12 ft. bed, 38 inch swing by 9 ft.

Guy C. Hotchkiss, Field & Co.

85 First St., Brooklyn, E. D., and New York City.



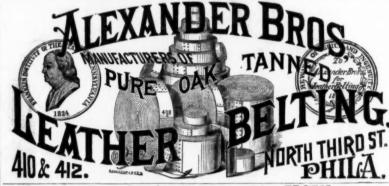
FOR MELTING ALL KINDS OF METALS, And Manufacturers of

Sunny Side Stove Polish.

Lumber Pencils, Foundry Facings and Lubricating Plumbago.

STROW, WILE & CO.,

Nos. 1324, 1326, 1328, 1330, 1332 & 1334 Callowhill St., Phila. GENERAL ACENTS:



I am now prepared to furnish as a specialty MAIN

OR DRIVING BELTS of any width, single or double, manufactured especially for the work to be performed, at VERY

CLOSE FIGURES.

DRIVING BELTS. Send for prices, stating dimensions and Speed of engine and pulleys, with full par-

CHARLES W. ARNY, Manufacturer, 148 North Third Street, PHILADELPHIA, PA.

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LEATHER BELTING.

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WITH WOOD OR IRON WHEELS.

A first-class article and a specialty, that will make a demand in any market and afford a good margin dealers. We are prepared to furnish them in large ovarities. Manufactured by

BRYAN MANUFACTURING CO., Bryan, O.

SEMPLE, BIRGE & CO., Sole Western Agents, ST. LOUIS, WO,



The Prince of all Base Burners.

Four Sizes. -Nos. 25, 30, 40 and 50. Two Sizes with Ovens, Nos. 30 and 40.

THE CENTENNIAL YEAR

ITS FIRST APPEARANCE.

All New Patterns made at our own Works.

It has many Essential Features entirely different from anything in the Market. Its general appearance is very attractive; its beauty of oroamentation is unequaled; its working-qualities perfect; beside, its smoothness of castings, perfect fittings, burnished edges, full nickel-plated trimmings places it at the head of them all. All doors swing out on a hinge, can be easily taken off to facilitate in black-

ing and cleaning the micas, and are provided with a portable, nickelplated Turnbuckle, a new feature originating with us, as well, also, as the Urn Ornamental Top, which we claim Letters Patent on. Nickle-plated Plate ornaments the base of the Stove. Handle to dampers, number plate and even the heads of the rivets are all nickelplated. The trade should not delay sending for a sample stove to insure their taking the lead in their respective localities.

WE ALSO MANUFACTURE A FULL LINE OF

Cooking, Parlor and Heating Stoves,

unsurpassed by any in the market, as we use nothing but the best of Lake Superior Charcoal and other First Class Brands of Iron.

Send for Catalogue and Price Lists.

N. B .- To the Eastern Dealer we can arrange freight charges satisfactorily.

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Detroit, Mich.







Split Pulleys & Split Collars

YOCOM & SON.

rinker St., below 147 N. 2nd St

PHILADELPHIA, PA. The National Steel Tube Cleaner



Guaranteed to clean better, last longer and work easier than any in the market. Removes all Carbon and Scale on the Boller Tubes. Adopted and in use by United States Navy. For sole by dealers.

THE COLARIEMS NPENCE CO., Pool hast 9th St., N. h., Adopted to United States.



Branford, Conn., Manufacturers of the following Patented Articles of

MALLEABLE IRON:

Hammer's Adjustable Clamps. Hammer's Malleable Iron Oilers. Hammer's Mall. Iron Hand Lamps. Hammer's M. I. Hanging Lamps. r Sale by all the principal Hardware Dealers

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Of superior Quality and Hardware Specialties in Maneague Iro made to graer.



MANUFACTURER,

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JOHNSON'S PATENT UNIVERSAL LATHE CHUCK.



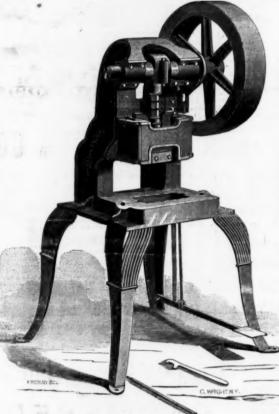
to the superior co Its working parts ar nts working parts are nb solutely pro-tected from dirt and chips. It is strong, compact and durable, and will hold the greatest variety of work, as the jaws are adjustable with a are adjustable with a range the full diame

er of the chuck. For Price List address. Lambertville Iron Works, Lampertville, N. J.

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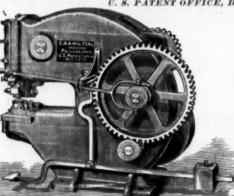
RETABLISHED MACHINE

Patented" Furnace Charging Scale, Double Beam R. R. Track Scale, Com-pound Parallel Crane Beams, &c. Patented First Power Lover Wagon Scales. Testing Machine and capacity



FOR WORKING SHEET METALS, &c. 173 Plymouth Street, Cor. of Jay, Brooklyn, N. Y.

TEAL'S IMPROVED **POWER** PUNCH.



C. A. & W. L. TEAL, 4116 Ludlow St., Philadelphia, Pa. (Removed from 3029 Chestnut St.)
P. O. Address, Station B. Philad CENTENNIAL SPACE, NO. 5027, SECTION C. 3, MACHINERY HALL.



SOUTH BEND IRON WORKS, South Bend, Ind. REVOLVERS. IMPROVED DERINGER

No. 1, 22 Calibre; No. 2, 32 Calibre, Long Cartridge.



EDW. K. TRYON, Jr., & CO., Dealers in FIRE ARMS, No. 19 North Sixth Street and 220 North Second Street, PHILADELPHIA, PA.

olic. They are made in the original inver in Planes. All cur Planes, embracing Pla ammers, Mitre Boxes, CUSHMAN STREET HARTFORD.CONN

HARTFORD, CONN.

Die Plates and Lies, Genuine Packer Ratchet Drills, Clamp, Die and Common Lathe Dogs, Barwick Wrench and Pipe Tongs, the

Billings Patent Sewing Machine Shuttles, Marlin Spikes, Calkers' Tools, Clinch Rings, Saw Sets, Screw Drivers. And all description of IRON AND STEEL

Drop Forgings. Send for a Circular.



Ausable Horse Nail Go.,

HAMMERED. Hammer Pointed, Polished & Blued

HORSE NAILS,

BENZON IRON. Orders promptly filled at lowest market rates. ABRAHAM BUSSING, Secretary, 35 Chambers Street, New York.

GLOBE NAIL COMPANY,

Pointed, Polished & Finished Horse Shoe Nails.

Recommended by over 20,000 Horse Shoers.

All nails made from best NORWAY IRON, and warranted perfect and leady for driving. Orders filled promptly and at lowest rates by

GLOBE NAIL CO., Boston, Mass.

Reported by Sellew & Co., Importers and Jobbers i. Metals, No. 214, 216 and 218 Main street. June 29, 1876.
Tin Plate. -- I. C. 10x14 Charcoal...
I. X. 10x14 Charcoal...

I. A. IUX14 Chare	OM1	***********		GB 10 0
I. X. 14x20 Charc	oal			GB 10°78
1. XX. 14x20 Cha	rcoal		***	@ 14.0
I. C. 12x12 Charc	oal			@ 9.50
D. C. 121/x17 Cha	reoal			66 9-25
D. X. 12%x17 Ch	arcoal			@ 11.7
I. C. 14x20 Charce	oal Roofin	Ø		@ 7.7
1, C. 20x28 Chare	oal Rooth	90	***	40 17:56
1. C. 19x14 Coke.				60 7.54
I. C. 14x21 Coke.				G 8:56
I. C. 10x20 Coke.		**********	***	@ 13.0
heet ZincCa	*********	**********		66 9%
nert Zinc Ca	BK	***********	***	@ 10%
SneetBrazier		*********		
opper. Brazie	·			@ 32
Pianished				@ 40
Sheathing				(a) 82 (
Bottoms			***	@ 34 0
Bar	*********		***	60 82 6
Block TinPig.	*********		***	@ 24 0
Bars				@ 26
eadPig				60 7360
Bar				@ 8560
Bar solder,—S. & Co Al. Jarket Wire.				@ 14 (
A 1				66 15 (
Incker Wire .	-Bundles			dia 40 4
Less heet Iron.—"E Smooth, "S L U, Smooth D Retine				dia 35 4
innet tron"	" No. 27		******	4:500
Smooth "SI. II	17 No. 97			5-100
Smooth D Putte	ed No. 27	**********	******	6.804
Piantshed "A "	, 140x 40.	***********		194
Pianished "A." Pianished "B"	*********	**********	*******	114
Imitation A	*********		***** ***	10
imitation B	*********	**********	******	41.00
Galvanized	*******	***********		410 001 / 0
Kunada		**********		150
Russia Brnss.—Soft		**********	** **	200
THE ME SOIL	*********	**********		
Hoop	*********	****** *****	*******	*********
Platers'	********	**********	*******	
Tube				500
Tube		*********	* *** ***	500
Tube		*********	* *** ***	500
Tube		*********	* *** ***	500
Tube	No. t 45c	3 25c	3 20c	50c 19 4 10c \$3 50
Tube	No. t 45c	3 25c	3 20e	500 19 4 10c \$3.56
Tube	No. t 45c	25c	alle	
Tube	No. t 45c	3 Sc	3 Sue	
Tube	No. t 45c	3 Sc	3 Sue	
Tube	No. 1 45c	3 Sc	and new	
Tube	No. 1 45c	3 Sc	and new	
Tube	No. 1 45c	3 Sc	and new	

CHIC				
Reported by Frank Sturge	1, 1876.	78 de 78	Lak	6 121
Tin Plate.	14x30, IX	X. Ch'	Boat	14 5
10x14, 1C,Ch'l, Good.\$	14x20, IX		**	171
10x14, 10, ' Best, 850			0.0	8 5
10x14 4.X. "	DX.	10	66	116
12x12, IC. " " 9 00		80	44	19 5
Lex12, 1X, " " 11 50	DXXX.	69	66	16 (
14x36 IC. " " 9 50	IX. 14x14	4.0		-
14x20, 1X, " " 12 0J				
14x20, IC, Charcoal Roofin	g. Com			
14x20, 1C. "	Good			
14x20, IC, "	Mest			9 (
14x20, IX. "				
20x2s. IC. **	Com			
20x28. IC, 44	Good			
20x28, IC, 44	Best			17 4
20x28, IX, "	66			22 (
_10x20, IC, Bright Coke for	Gutters	*******		13 4
Block Tin				
Large Pigs 24c	Bars		*** ***	36
Small				
Zinc.—sheet, 500 to 1000 in	. Casks		** ***	9%
Loose Sheets				105
Blad Zinc or Spelter				LOS
Copper.—Bottoms				. 35
Sheathing				. 31
Planished	**********			36
" Boller lengton.				36
Molt				%
Braziers' ~heets.— 30x60, 6 to 7 lbs h m				

-F. S. & Co.'s make 18c 17c	Mach Skc Sleigh Shoc. 454
8%c 5 c 6%c 8%c	Coke " 1C, 14x20, 6 00 Lead 9 1
At 26. A c 5kc 6kc 9 c	METALS. Pig 736
nized Iren #6 30 5 to 20 12c + No. 27 15c to 24 13c 98 10c	Banca 23c Pipe 8.5
& 26	German 9 c Antimony. gold 16
can ftussin. B	Commented encelled has Commenter Direct & Co.
78/C Lead Pine when cut 41.6	Apple Parers Conqueror 7 goz, \$7

BOSTON. ocomber, Bigelow & Dowse, Oliver St.) Cards, No. X, per doz., \$6°35.

Hura Cards, No. X, per doz., \$6°35.

Hura Cards, No. X, 920.

Wool No. SX, 9250.

Cotton No. 10.

Cartridges.— U. 8. Cartridge Co.

Chieds.— "Buck Bros." Shank Goods.

Socke". hurns.-Lightning-Redheffer patent.

Deep Flange.-#350 Deep Fiange. 5. 5½, 6 inch. dis E Hammers.—Maydole. . . . dis E M., B. & D., solid cast steel, adze eye, No. I, \$10; 1½, No. \$11: 1%, \$9-75.

Willoughby Lake," first quality...... # gross \$6.76

willoughby Lake, "first quality....... # gross \$6.76

second quality....... # gross \$6.76

Boston Metal Markets

(Corrected by Fuller, Dana & File, 110 North Street, Boston, Importers and Commission Merchants.)

Iron.—Beet Refined Bar Iron. \$\psi\$ ton \$49 (0) \$80 (d) \$115 (0) \$10 (d) \$10 (d) \$117 (d) \$10 (d) \$117 (d) \$10 (d) \$117 (d) \$10 (d) \$122 (d) \$10 (d

Sarams,—Junan, No. 2, \$700; No. 3, \$750; No. 3, \$750. No. 3850.

Cider Bills.

American Sealor. \$200; Am. Junior. \$1950.

Corn Brill,—Campbell's Patent.

each

Hond State

Hond Stat

Corn Kallves.—Dunn Ege Tol Co. s Clip. # aoz 5 00
Seymour Mgr. Co. s Solid Steel Back... 4 00
Corn Shellers.—Sandwich Mg. Co. 8—
I wer Shellers.—Shellers.—Dund Shellers.
Corn Shellers.—Shellers.—Shellers.—Dund Shellers.
Carver, with 1cm. Saws, 14750 a Saw. dis 10 5
12 in. Saws, 18700 a Saw. dis 175 5
Crow Bars.—Steel Pointed. 8 9 6 540
Drag Naw Machanes.—
Culver's ion Drag Saw. dis 10 5
Ronning Millis.—Nsh & Cutt's.—A dis 20 5
Santord No. 1, 12 00 (1) No. 2, 28 0.
Fanning Millis.—Nsh & Cutt's.—Shellers.—Bur Mills.—Shellers.—Shelle

Frame Pol. Wheel. No. 18, 36c., 18, 11s., 16, 38c., 2 in. Common Arle. No. 18, 36c., 18, 11s., 18, 11s., 25, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in. Milled Axle. No. 2, 42c., 12, in., 2, 50c., 2 in., 2

St. Louis Metal Market.



TO ALL WHO USE STEAM-POWER!

We will put our Governor on any Engine, and guarantee it to prove itself superior to all others.

If, after a fair trial, it does not, we will take it off at our own expense.

BETHLEHEM, PA.

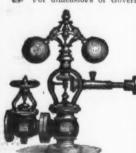
SHIVE'S PATENT WATCHMAN'S CLOCK AND DETECTOR,

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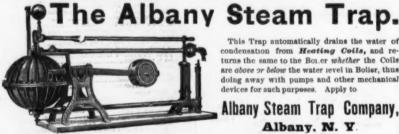
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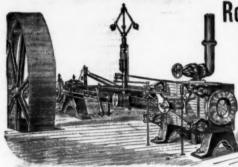
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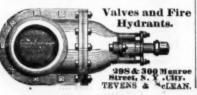


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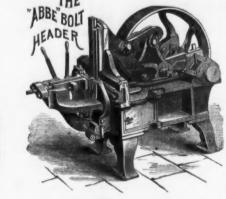
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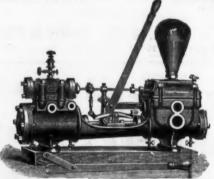
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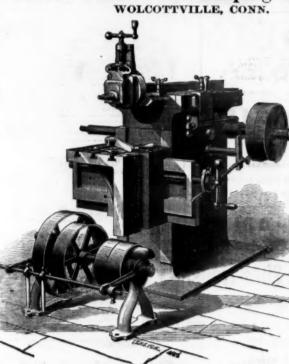
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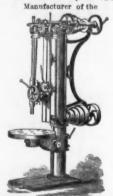
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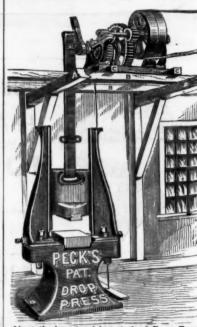
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